COMPILATION OF APPROVED SPECIFICATIONS

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
2004 EDITION

REVISIONS
SUPPLEMENTAL SPECIFICATIONS
SPECIAL PROVISIONS

JANUARY – JULY

2004

TABLE OF CONTENTS

Code	Title	Page
101.28 & 103.02b	Financial Statements……..	AC-1
102.12	Disqualification of Bidders and Rejection of Proposals……	AC-2
109.12	Subcontractor Prompt Payment ……	AC-3
212	Maintenance and Cleaning of Erosion and Pollution Controls……..AC-4	
401.03.2a	Material Transfer Vehicle (MTV) ……	AC-5
408.0100 & 408.0200	Cleaning and Sealing Cracks in Bituminous Concrete Pavement: ……AC-7 Cracks Less than 1-Inch and 1-Inch and Over in Width	
411.0100	Paver-Placed Elastomeric Surface Treatment…….……..……AC-11	
412.0100	Rubberized Asphalt Chip Sealing……...…..AC-14	
803.0300	Partial Removal and Disposal of Existing Concrete Masonry.……AC-19	
803.0400	Cleaning Bridge Beam Seats……AC-22	
808.1860	Concrete Architectural Treatment – Form Liner Finish…..…….AC-23	
820.0200	High-Pressure Water Cleaning of Concrete Surfaces…..…….……...	AC-25
820.0300	High-Pressure Water Cleaning of Bridge Structures…..…….….	AC-26
823.1755	Asphaltic Expansion Joint System – Materials and…….…… Workmanship Warranty	AC-28
825.1000	Paint Systems for Structural Steel……	AC-39
929.0300	Champ Management System…..……..…..……	AC-43
929.1000	Field Offices and Materials Laboratory..……..	AC-45
930.1000	Plant Field Laboratory……..……	AC-46
943.0100	Training Provisions.…….……	AC-47

Delete **Subsections 101.28; Definitions and Terms – Financial Statements** and **103.02b; Post-Qualification Requirements and Award of Contract – Financial Statements**, pages 1-5 and 1-20 of Part 100, General Requirements and Covenants of the R.I. Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition in their entirety and replace with the following.

SECTION 101

DEFINITIONS AND TERMS

101.28 FINANCIAL STATEMENTS. A set of reports detailing, on an annual, semi-annual or other prescribed time period, the financial activity of a company, corporation or other business venture. For purposes of Post Qualification and Award, these shall include a complete set of audited financial statements certified by a Certified Public Accountant (CPA) or, in the case of contracts valued at $500,000 or less, a bidder's financial references and an original copy of its current financial statement.

SECTION 103

AWARD AND EXECUTION OF THE CONTRACT

103.02 POST-QUALIFICATION REQUIREMENTS AND AWARD OF CONTRACT.

b. Financial Statements. The successful bidder will be required to submit a complete set of audited financial statements certified by a Certified Public Accountant (CPA). For contracts valued at $500,000 and under, the successful bidder is required to submit only its financial references and an original copy of its current financial statement.

Delete **Subsection 102.12; Bidding Requirements and Conditions - Disqualification of Bidders and Rejection of Proposals,** pages 1-16 and 1-17 of the Standard Specifications for Road and Bridge Construction, 2004 Edition in its entirety and replace with the following.

SECTION 102
BIDDING REQUIREMENTS AND CONDITIONS

102.12 DISQUALIFICATION OF BIDDERS AND REJECTION OF PROPOSALS.

a. Mandatory Reasons for Disqualification. The Department will declare a Proposal unresponsive and shall disqualify a bidder for any of the following reasons:

1. More than one Proposal for the same work from an individual, partnership, corporation or joint venture under the same or different name;

2. Evidence of collusion among bidders. Participants in such collusion will not be considered for future proposals until re-qualified by the Department;

3. The making of false statements on prequalification documents and/or other required bidder's certifications;

4. Failure to comply with any prequalification requirements as set forth in **Subsection 102.01**;

5. Debarment by Federal or State authorities; or

6. Failure to provide a properly executed Contract Bond.

b. Other Reasons for Disqualification. The Department and the Division of Purchases reserve the right to declare a Proposal unresponsive and may disqualify a bidder for any of the following reasons:

1. Lack of competency and adequate machinery, plant and other equipment;

2. Uncompleted work under Contract which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work, if awarded;

3. Failure to pay, or satisfactorily settle, all bills due for the Prime Contractor’s labor and material on Contracts in force with the Department at the time of the Bid Opening;

4. Failure to pay or satisfactorily settle Subcontractor Payments as provided for under Section 109.12, Subcontractor Prompt Payment where good cause, as determined by the Department of Transportation, has not been accepted. Determination of failure to pay or satisfactorily settle Subcontractor Payments will be made within 30 days of bid opening; provided however that the bidder shall have the right to either pay or settle any such claims within said 30-day period.

5. Failure to comply with any post qualification regulations or requirements of either the Department or the Division of Purchases;

6. Default under previous contracts;

7. Unsatisfactory performance on a previously awarded contract; or

8. Failure to reimburse the State for monies owed on any previously awarded contracts including those where the prospective bidder is a party to a joint venture and the joint venture has failed to reimburse the State for monies owed.

Delete **Subsection 109.12; Measurement and Payment - Subcontractor Prompt Payment**, pages 1-80 and 1-81 of the Standard Specifications for Road and Bridge Construction, 2004 Edition in its entirety and replace with the following.

SECTION 109

MEASUREMENT AND PAYMENT

109.12 SUBCONTRACTOR PROMPT PAYMENT. The Prime Contractor shall make prompt payment for satisfactory subcontract work for which the Department has made partial or full payment. The term "Subcontractor" as used herein, is defined in **Subsection 101.70; Subcontractor**.

When a Subcontractor has not received payment for work paid to the Prime Contractor within 30-days from receipt of the actual check by the Prime Contractor from the State, a formal complaint may be filed under the following procedures:

1) The Subcontractor will send written notification to the Department, including contract item numbers, date work performed, a copy of the invoice(s) from the Subcontractor to the Prime, and a copy of the Progress Payment where payment to the Prime Contractor was included. The latter item may be obtained from the Department's field supervisor or Construction Office. If the Subcontractor has not provided a payment/performance bond for this work to the contractor, then the formal complaint must also include verification that all suppliers and other debts on these items have been paid or documented reasons for non-payment acceptable by the Department. Failure to provide this verification will be considered "good cause" for postponement of payment by the Prime Contractor.

2) The Department will notify the Prime Contractor of the formal complaint in writing within 15 days and will proceed to withhold an amount equal to the previous payment(s) made to the Prime Contractor for the specific subcontractor's work. The Prime Contractor must submit written documentation to the Department demonstrating good cause for not making the required payment within 15 days. If the Department does not receive the required documentation within the required 15 days or does not accept the Contractor's good cause justification, the Department will withhold or continue to withhold an amount equal to all previous payments to the Prime Contractor for the specific Subcontractor's work until the Department has verified payment to the Subcontractor. If the Department accepts the Prime Contractor's good cause justification, it will notify the Subcontractor of its decision that this is categorized as a dispute and payment to the Prime Contractor will be released. The Subcontractor and Prime Contractor may solve their dispute in any fashion they so choose (arbitration, mediation, litigation, etc.). The cost of any such arbitration/mediation shall be borne by both parties at an equal share or as otherwise provided for in any agreement between the parties.

3) Should the two parties enter into a payment agreement/settlement, the Department will only release previous monies held in accordance with the agreement/settlement. Should the Prime Contractor default again, the Department will contact the bonding company and request complete payment within 15 days. Should the bonding company and/or Prime Contractor fail to make complete payment after a 15-day period, all progress payments to the Prime Contractor will stop until the subcontractor is paid and the dispute is resolved to the satisfaction of the Department.

Any delays and/or claims resulting from the actions taken by the Department under this Specification will not be the responsibility of the State.

Delete **Subsections 212.04 and 212.05; Maintenance and Cleaning of Erosion and Pollution Controls – Method of Measurement** and **Basis of Payment**, page 2-55 of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition in their entirety and replace with the following:

SECTION 212

MAINTENANCE AND CLEANING OF EROSION AND POLLUTION CONTROLS

212.04 METHOD OF MEASUREMENT. "Maintenance and Cleaning of Erosion and Pollution Controls" as specified in this Section will not be measured by a single unit of measurement usually associated with a specific Proposal item. Rather, this work will be documented and paid for on a Force Account basis as set forth in **Subsection 212.05** which follows.

212.05 BASIS OF PAYMENT. When so-directed by the Engineer, the "Maintenance and Cleaning of Erosion and Pollution Controls" will be paid for on a Force Account basis as set forth in **Subsection 109.04; Differing Site Conditions, Changes, Extra Work and Force Account Work; Para. a(4)** of these Specifications.

The estimated total amount established by the Department and indicated for this item in the Schedule of Prices in the Proposal is the amount from which said Force Account payments will be drawn.

Add the following new **Subsection 401.03.2a; Material Transfer Vehicle (MTV)** to **Subsection 401.03.2; Dense Graded Bituminous Concrete Pavements - Hauling Equipment**, page 4-11 of the RI Standard Specifications for Road and Bridge Construction, 2004 Edition.

SECTION 401

DENSE GRADED BITUMINOUS CONCRETE PAVEMENTS

401.03.2a Material Transfer Vehicle (MTV). A material transfer vehicle (MTV) is required for the construction of all bituminous friction, surface and intermediate courses on all limited access highways. Table 1 contains a statewide list of limited access highways. When friction course is used, both the friction course and the underlying layer must be placed using an MTV.

The MTV shall independently deliver hot mix asphalt (HMA) from the hauling equipment to the paving equipment. A paving hopper insert with a minimum capacity of 14 tons shall be installed in the hopper of conventional paving equipment when a MTV is used.

As a minimum, the MTV shall have a high capacity truck unloading system which will receive HMA from the hauling equipment; a storage system in the MTV with a minimum capacity of 15 tons of HMA; and a discharge conveyor with the ability to swivel to either side to deliver the mixture to the paver while allowing the MTV to operate from an adjacent lane. In addition, the paving operation must contain a remixing system to blend the mixture prior to placement. The speed of the paver and MTV shall be adjusted to coordinate with the availability of HMA. Failure to keep the MTV supplied with HMA shall be cause to cease paving operations for that day.

When an MTV is to be used on a project, the Contractor shall further investigate the possible movement of the fully or partially loaded MTV on the project. If there are any structures on the project that the fully or partially MTV will traverse, the Contractor shall request an Overweight Permit Check from the Department. Such a request, including the axle configuration and weights, and the project limits, shall be made in writing and operations shall not begin until this permission is received from the Department and one copy forwarded to the Engineer.

TABLE 1 – LIMITED ACCESS HIGHWAYS

I-95	Connecticut State Line to Massachusetts State Line
I-195	I-95 to Massachusetts State Line
I-295	I-95 to Massachusetts State Line
US Route 1	Prosser Trail to Wakefield Cut-Off
RI Route 4	Route 138 to I-95
US Route 6	Route 102 to Route 101
RI Route 10	Park Avenue to Route 6
RI Route 24	Route 114 to Massachusetts State Line
RI Route 37	Natick Avenue to Post Road
RI Route 78	Route 1 to Connecticut State Line
RI Route 99	Route 146 to Mendon Road
RI Route 114	I-195 to Forbes Street
RI Route 138	Route 1 to Admiral Kalbfus Road
RI Route 146	I-95 to Reservoir Road
RI Route 146	Route 146A to Massachusetts State Line
RI Route 403	Route 4 to Quonset Point
Airport Connector	I-95 to Post Road
Red Bridge Extension	Waterman Street to Taunton Avenue

408.0100
CLEANING AND SEALING CRACKS IN BITUMINOUS CONCRETE PAVEMENT: CRACKS LESS THAN ONE INCH IN WIDTH

408.0200
CLEANING AND SEALING CRACKS IN BITUMINOUS CONCRETE PAVEMENT: CRACKS ONE INCH AND OVER IN WIDTH

408.01 DESCRIPTION. This work shall consist of performing all operations and furnishing all materials, labor, and equipment necessary in connection with the cleaning and sealing of cracks and open joints in bituminous concrete pavements at the locations indicated and as directed by the Engineer, all in accordance with these Specifications. In this specification, the terms "crack" and "open joint" are used synonymously.

All cracks shall be designated as follows:

- Cracks 1/16-Inch to Less than One Inch in Width;
- Cracks One Inch and Over in Width;
- Alligator Cracks, which are cracks in any area where the density and/or severity of cracking forms a chicken wire or alligator pattern.

408.02 MATERIALS.

408.02.1 Sealant. The sealant shall be either one of the following and shall be subject to approval by the Engineer prior to the start of work.

a. Joint and crack sealant, hot applied, conforming to ASTM D6690 Type II.

b. Fiber reinforced modified asphalt compound consisting of:

1. Modified Asphalt Binder - This shall consist of a blend of neat asphalt cement and crumb rubber, which are chemically bonded to produce a modified asphalt binder that complies with all the requirements of AASHTO MP1a for PG 70-34, with a separation less than 5% (AASHTO PP 5-93, Section 8.3). The modified asphalt binder shall not contain any particles of rubber or elastomeric material when tested in accordance with AASHTO T 44. The viscosity shall not exceed 3 Pa·s at 300°F. The dynamic shear of the pressure aging vessel residue shall not exceed 5000 kPa at 7°C. The elastic recovery at 4°C (AASHTO T301) shall be not less than 70%. The modification at a minimum shall consist of 5% crumb rubber from tires. The supplier of the modified asphalt binder shall certify the composition and PG grade of the modified asphalt binder.

2. Asphalt Cement - The high temperature grade (AASHTO MP1a) of the neat asphalt cement shall not exceed PG 58-XX.

3. Crumb Rubber – The modified asphalt binder shall have a crumb rubber content of not less than 5% by weight of neat asphalt cement. The maximum size of the crumb rubber shall be 80 mesh.

4. Chemical Bonding Agent – The chemical bonding agent shall be heat stable and compatible with asphalt and rubber.

5. Fibers - Polyester, fully drawn.

Length	10 mm (max)
Denier	15 dpf (max)
Tenacity	4 gpd (min)
Crimp	none
Color	natural

Fiber Reinforced Modified Asphalt Compound Properties:

Fiber concentration	8% by weight of modified asphalt binder; uniform dispersion of fibers
Elongation	8% at 0°F (max)
Tensile Strength	450 psi at 0°F (min)

Blending of the fibers with the modified asphalt binder shall be in accordance with the recommendations of the manufacturer of the fibers.

408.02.2 Filler. Filler shall consist of Bituminous Concrete Class I-2 or High Performance Bituminous Cold Patch. The crack filler shall be compatible with the crack sealer and be pre-approved by the Engineer.

408.02.3 Blotter Material. Blotter Material shall be black beauty.

408.03 CONSTRUCTION METHODS.

408.03.1 Equipment. Equipment shall be subject to the approval of the Engineer and maintained in a satisfactory working condition at all times.

a. Air Compressor. Air compressors shall be portable and capable of furnishing not less than 100 cubic feet of air per minute at not less than 120 pounds per square inch pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.

b. Hot Air Lance. A hot air lance for cleaning, drying, rejuvenating and heating sidewalls of cracks shall provide clean, oil-free compressed air at a volume of 100 cubic feet per minute, a pressure of 120 pounds per square inch and a temperature of 2000ºF. The lance shall be designed such that the flame does not come in contact with the pavement.

c. Hand Tools. Hand tools such as brooms, shovels, metal bars with chisel shaped ends, tamping equipment and other miscellaneous tools which may be used to accomplish this work.

d. Melting Kettle. The unit used to melt the sealant shall be a double boiler, indirect fired type with a heating capacity of 550ºF. The space between the inner and outer shells shall be filled with suitable heat transfer oil or substitute having a flash point of not less than 530ºF. The kettle shall be equipped with a satisfactory means of agitating the crack sealer at all times. This may be accomplished by continuous stirring with mechanically operated paddles and/or by a continuous circulating gear pump attached to the heating unit. The kettle must be equipped with thermostatic control calibrated between 200ºF and 550ºF with a $\pm$5ºF accuracy and a temperature measuring device located such that the Engineer may safely check the temperature of the sealant material.

e. Wand Applicator. The wand applicator shall be capable of applying the sealant to the specified width. It shall be connected to the holding tank through a heated applicator hose that ensures operator safety and allows operator control of material flow. A device shall be mounted to bypass material into a holding tank should the applicator nozzle shut off.

f. Squeegee. Industrial type to shape the surficial sealant material into a feather-edge band 2-1/2 inches wide.

408.03.2 Preparation of Surface. The crack sealing operation shall be performed only on pavement surfaces that have been thoroughly cleaned and swept by the Contractor.

a. General. No crack sealing material shall be applied when the ambient temperature is below 40ºF or above 90ºF; nor shall it be applied in wet weather, when the pavement is wet, or when frost, snow, or ice is present. If such conditions are present, drying of the cracked areas to be sealed with a hot compressed air lance may be performed with the approval of the Engineer. Care shall be taken so as not to damage traffic loops.

b. Cleaning. All cracks to be sealed shall be thoroughly cleaned with a hot compressed air lance. Cleaning shall remove all moisture, dirt, foreign material and loose edges.

c. Debris Removal. All loose material and debris evacuated from the cracks shall be immediately removed from the pavement surface by means of mechanical sweepers or hand brooms.

408.03.3 Sealing of Cracks

a. Cracks Under 1/16-Inch in Width shall not be sealed.

b. Cracks 1/16-Inch to Less than One Inch in Width.

1. Preparation of Sealer. Crack sealing material shall be heated and applied at the temperature specified by the manufacturer. The sealant shall have the consistency of a free flowing liquid.

2. Heating of Cracks. The sealant shall be applied within three minutes of the cracks being heated with the hot air lance.

3. Installation of Sealer. All cracks shall be sealed according to the manufacturer's recommendations at the time of sealant approval, the sealant shall be well bonded to the pavement, and as specified herein. The cracks shall be completely filled and banded with a 2-1/2 inch width of sealant centered directly over the crack. The thickness (i.e., projection above the pavement profile) of the middle portion of the sealant band shall be between 1/16 and 3/16 inches. The band shall be feathered so its edges are flush with the pavement. More than one application of sealant may be necessary where the sealant has sunk into the crack, leaving a crevice. A squeegee may be required to obtain the sealant profile. There shall be no defects, including any formation of voids or entrapped air. Blotter material shall be spread over the hot sealant to prevent lifting and tracking. Corrections of these deficiencies or other unsatisfactory work unacceptable to the Engineer shall be at no additional cost to the state.

c. Cracks One Inch and Over in Width.

1. Preparation of Sealer. Preparation shall follow the procedures **Subsection 408.03.3, Para. b.1** above.

2. Heating of Cracks. Cracks shall be filled and sealed within three minutes after being heated with the hot air lance.

3. Filling of the Cracks. All cracks of sufficient depth shall first be coated with sealant material on all contact surfaces, filled with Class I-2 bituminous mixture or high performance cold patch, compacted by rolling and tamping, and sealed in accordance with the provisions of **Subsection 408.03.3, Para. b.3** above with two or more adjacent passes of the wand.

d. Alligator Cracks.

1. Preparation of Sealer. Preparation shall follow the procedures of **Subsection 408.03.3, Para. b.1** above.

2. Heating of Cracks. Cracks on the perimeter or boundary of the alligator cracked area shall be treated in accordance with the provisions of **Subsection 408.03.3, Para. b.2** above.

3. Installation of Sealer. The cracks on the perimeter or boundary of the alligator cracked area shall be completely filled and banded with a 2-1/2 inch width of sealant in accordance with the provisions of **Subsection 408.03.3, Para. b.3** above. **There shall be no treatment of the alligator cracks within the boundary.**

408.04 METHOD OF MEASUREMENT.

408.04.1 Cracks Less than One Inch in Width. "Cleaning and Sealing Cracks in Bituminous Pavement: Cracks Less than One Inch in Width" will be measured by the number of linear feet of cracks actually sealed in accordance with this contract and/or as directed by the Engineer.

408.04.2 Cracks One Inch and Over in Width. "Cleaning and Sealing Cracks in Bituminous Pavement: Cracks One Inch and Over in Width" will be measured by the number of linear feet of cracks actually sealed in accordance with this contract and/or as directed by the Engineer.

408.04.3 Alligator Cracks. There will be no separate measurement for this item, however "Cleaning and Sealing Cracks in Bituminous Pavement: Alligator Cracks" will be measured by the number of linear feet of cracks actually sealed in accordance with this contract and/or as directed by the Engineer and included in the measurement under **Section 408.04.1** above.

408.05 BASIS OF PAYMENT.

408.05.1 Cracks Less than One Inch in Width. The accepted quantity of "Cleaning and Sealing Cracks in Bituminous Concrete Pavement: Cracks 1/16-Inch to less than One Inch in Width" will be paid for at the contract unit price per linear foot as listed in the Proposal. The price so-stated constitutes full and complete compensation for furnishing and applying all materials; labor, equipment, tools; cleaning of cracks and debris removal; maintenance and protection of traffic, including but not limited to trucks (with Truck Mounted Attenuators, Flashing Arrow Boards and Variable Message Signs), temporary construction signs, and any incidentals necessary to complete the work in accordance with the contract and to the satisfaction of the Engineer. Initial sweeping of the pavement will be paid for separately.

408.05.2 Cracks One Inch and Over in Width. The accepted quantity of "Cleaning and Sealing Cracks in Bituminous Concrete Pavement: Cracks One Inch and Over in Width" will be paid for at the contract unit price per linear foot as listed in the Proposal. The price so-stated constitutes full and complete compensation for furnishing and applying all materials; labor, equipment, tools; cleaning of cracks and debris removal; maintenance and protection of traffic, including but not limited to trucks (with Truck Mounted Attenuators, Flashing Arrow Boards and Variable Message Signs), temporary construction signs, and any incidentals necessary to complete the work in accordance with the contract and to the satisfaction of the Engineer. Initial sweeping of the pavement will be paid for separately.

408.05.3 Alligator Cracks. There will be no separate payment for this item. The accepted quantity of "Cleaning and Sealing Cracks in Bituminous Pavement: Alligator Cracks" will be paid for at the contract unit price per linear foot as listed in the Proposal under the provisions of **Subsection 408.05.1** above**.** The price so-stated constitutes full and complete compensation for furnishing and applying all materials; labor, equipment, tools; cleaning of cracks and debris removal; maintenance and protection of traffic, including but not limited to trucks (with Truck Mounted Attenuators, Flashing Arrow Boards and Variable Message Signs), temporary construction signs, and any incidentals necessary to complete the work in accordance with the contract and to the satisfaction of the Engineer.

411.0100

PAVER PLACED ELASTOMERIC SURFACE TREATMENT

411.01 DESCRIPTION This work shall consist of providing a paver placed elastomeric surface treatment (PPEST) at the locations designated on the plans and as directed by the Engineer. All work shall be performed in accordance with the provisions of Part 400 of the Standard Specifications for Road and Bridge Construction, with the following additions and amendments.

411.02 MATERIALS

411.02.1 Modified Asphalt Binder. This shall consist of a blend of neat asphalt cement and crumb rubber, which are chemically bonded to produce a modified asphalt binder that complies with all the requirements of AASHTO MP1a for PG 76-34, with a separation less than 5% (AASHTO PP 5-93, Section 8.3). The modified asphalt binder shall not contain any particles of rubber or elastomeric material when tested in accordance with AASHTO T 44. It shall incorporate an aromatic VOC inhibitor to mitigate odors at a dosage rate that conforms to the manufacturer's recommendation. The modified asphalt binder shall contain no polyphosphoric acid. In addition, the dynamic shear of the pressure aging vessel residue shall not exceed 5000 kPa at 7^{o}C. The elastic recovery at 4^{o}C (AASHTO T301) shall be not less than 70%. The supplier of the modified asphalt binder shall certify the composition and PG grade of the modified asphalt binder.

a. Asphalt Cement. The high temperature grade (AASHTO MP1a) of the neat asphalt cement shall not exceed PG 58-XX.

b. Anti-Stripping Agent. An anti-stripping agent that heat stable and approved by the Engineer may be added to the neat asphalt cement prior to blending with the crumb rubber. The dosage (not exceeding 1.0% by weight of asphalt cement) shall be within the manufacturer's specified range and shall be determined during the course of the mix design. (Note: Notwithstanding the addition of an anti-stripping agent, the asphalt binder grade shall be PG 76-34.)

c. Crumb Rubber. The asphalt binder shall have a crumb rubber content of not less than 7% by weight of asphalt cement. The maximum size of the crumb rubber shall be 80 mesh.

d. Chemical Bonding Agent. The chemical bonding agent shall be heat stable and compatible with asphalt and rubber.

411.02.2 Aggregate. The coarse aggregate shall be virgin crushed quarry rock from a RIDOT approved source. Processed gravel shall not be permitted. There shall be no more than 10% flat or elongated particles (ASTM D4791). The aggregate wear, from resistance to abrasion, shall be a maximum of 30% as determined by the Los Angeles Abrasion Test (AASHTO T 96).

The fine aggregate shall be crushed stone screenings, natural sand, or a blend thereof. No more than 10 percent of the total aggregate blend may be natural sand.

411.02.3 Mix Design. The mix design shall be in accordance with **Subsection 401.02.5** of the RI Standard Specifications, with the following exceptions:

a. The job-mix formula shall be within the following master range:

Sieve Size	Percent Passing
1/2"	100
3/8"	91 - 95
#4	40 - 45
#8	22 - 26
#30	9 - 12
#50	6 - 8
#200	4.0

b. The modified asphalt binder shall be the same grade and shall consist of the same components in the same proportions as the asphalt binder that will be used in production. The mixing and compaction temperatures shall be the same as those that will be used in production. The optimum modified asphalt binder content shall be not less than 6.0%.

c. The Marshall specimens shall be compacted with 50 blows on each side. The Moisture Sensitivity shall be determined in accordance with AASHTO T-283. At the optimum modified asphalt binder content, the mix shall satisfy the following requirements:

Property	Requirement
Stability (lb)	1000 min.
Flow (1/100 in.)	8 - 16
Voids (%)	4 -6
VMA (%)	18 min.
Moisture Sensitivity (%)	80 min.

411.03 CONSTRUCTION METHODS

411.03.1 Surface Preparation. All surface preparations shall be completed prior to applying the PPEST. All manhole covers, water boxes, catch basins and other such structures shall be adjusted prior to paving. These shall be covered and the location of each referenced for cleaning after paving. All localized depressions, ruts, trench cuts, utility settlements and joint settlements shall be brought to grade with a Type I-2 hot mix or high performance cold patch shim course. A tack coat shall be applied to these surfaces before the shim course is placed. High spots, localized bumps and joints shall be brought to grade by milling or other treatments approved by the Engineer. The entire perimeter of the pavement on which the PPEST is to be placed shall be milled. The milled wedge shall be 3 feet wide, triangular in shape and 1-1/4 inches at the extreme edge and feathered at the inside edge. At the limits of the work and at all cross streets, driveways, and any other locations where the PPEST will adjoin an existing pavement, the milling shall facilitate a smooth transition of the profile between the PPEST and the existing pavement. The transition shall be prior to the termini of any traffic detector loops. The surface shall be swept and thoroughly cleaned of vegetation, debris, loose aggregate, soil and dust, particularly soil that is bound to the surface. All matter shall be legally disposed off site. Prior to application of the surface treatment, the Contractor shall obtain from the Engineer approval and acceptance of the surface preparation.

411.03.2 Production Tolerances. The aggregate gradation and asphalt binder content of the production mix shall comply with the job-mix formula and optimum asphalt binder content, within the following tolerances:

Sieve Size	Tolerance
1/2"	-
3/8"	±5%
#4	±7%
#8	±4%
#30	±4%
#50	±3%
#200	±1.5%
Asphalt Binder	±0.3%

411.03.3 Mixing and Compaction Temperatures. The mixing and compaction temperatures shall be as recommended by the supplier of the modified asphalt binder.

411.03.4 Weather Limitations. The PPEST shall be placed only when the surface is dry and the surface temperature is at least 50°F and rising.

411.03.5 Time Limitation. The PPEST shall not be placed before June 1 or after September 30.

411.03.6 Tack Coat. An SS-1 or RS-1 asphalt emulsion tack coat shall be applied uniformly over the surface on which the PPEST is to be placed. The application rate shall be 0.10 ± 0.01 gallons per square yard. The tack coat shall be applied using the proper nozzle settings and the "double coverage" or "triple coverage" techniques outlined in Chapter 5 of the Asphalt Institute publication MS-22 "Construction of Hot Mix Asphalt Pavements."

411.03.7 Placement. The mix placement temperature shall be as recommended by the supplier of the modified asphalt binder.

Special attention shall be paid to the formation of longitudinal joints. The cold edge shall be as vertical and square as possible. Sloughed or disturbed material at the edge shall be luted back to form a vertical face in alignment with the joint.

411.03.8 Compaction. The compacted thickness of the PPEST shall be 1±1/4 inch. Under no circumstances shall the minimum thickness be less than ¾ inch.

Compaction shall commence immediately after placement. All rollers shall weigh at least 10 tons and shall operate in the static mode. Compaction to the specified density shall be attained before the PPEST cools to a temperature 20°F less than the specified compaction temperature.

411.04 METHOD OF MEASUREMENT

"Paver Placed Elastomeric Surface Treatment" will be measured by the number of square yards of paver-placed surface treatment completed in place in accordance with the contract or as directed by the Engineer.

411.05 BASIS OF PAYMENT

The accepted quantities of "Paver Placed Elastomeric Surface Treatment" will be paid for at the contract unit price per square yard as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all traffic control, including traffic control for adjustment of manholes, gates, catch basins and other such structures; mobile phones; surface preparation; furnishing, transporting, handling, placing and rolling the PPEST material as specified; site clean up; furnishing of all labor, tools equipment, and incidentals for the satisfactory completion of the work; and all work not specifically identified as separate pay items in the contract provisions.

The shim course, including the tack coat applied under the shim course, will be paid for under separate items in the Proposal.

Ten percent of the total amount due the contractor will be withheld until at least 60 days after all the contract work specified is completed, the surfaced highways have been opened to traffic and the surface treatment is determined to be performing satisfactorily.

412.0100

RUBBERIZED ASPHALT CHIP SEALING

412.01 DESCRIPTION This specification covers all materials, equipment, construction, application and post-placement procedures for the rubberized asphalt chip sealing of existing paved surfaces at the locations designated on the plans and as directed by the Engineer. The work shall consist of an application of rubberized asphalt binder followed by an application of pre-coated cover aggregate in accordance with this specification and as directed by the Engineer.

412.02 MATERIALS

412.02.1 Asphalt Cement. Neat asphalt cement for the rubberized asphalt shall meet all the requirements of AASHTO MP1a for PG 58-28. The high temperature grade shall not exceed PG 58.

412.02.2 Anti-Stripping Agent. If necessary for water resistance, an anti-stripping agent that is heat stable and approved by the Engineer shall be added to the neat asphalt cement prior to blending with the granulated rubber. The dosage (up to 1.0% by weight of neat asphalt cement) shall be determined during the course of the surface treatment design.

412.02.3 Granulated Rubber. The granulated rubber shall be vulcanized rubber from the ambient temperature processing of scrap pneumatic tires. The granulated rubber shall meet the following gradation. No substitutions will be accepted.

Sieve	% Passing
#10	100
#16	90-100
#30	25-75
#80	0-20

The use of rubber of multiple types from multiple sources is acceptable provided that the overall blend of rubber meets the gradation requirements. The length of the individual rubber shall not exceed 1/8". Certification shall be provided by the rubber supplier.

412.02.4 Cover Aggregate. The cover aggregate shall be virgin crushed quarry rock from a RIDOT approved source. Processed gravel will not be permitted. For the material retained on the #4 sieve, no more than 10% of the particles shall have a flatness or elongation ratio greater than 3:1 (ASTM D4791). The aggregate wear, from resistance to abrasion, shall be a maximum of 30% as determined by the Los Angeles Abrasion test (AASHTO T96). The aggregate shall be pre-heated to a temperature between 280º F and 320º F and be uniformly and completely pre-coated with a PG 64-28 or PG 58-28 prior to application. The asphalt content for the pre-coating shall be determined by laboratory and field testing and be approved by the Engineer. The gradation shall meet the following limits:

Sieve Size	% Passing
1/2"	100
3/8"	85-100
1/4"	0-25
#4	0-5
#8	0-3
#200	0-2

412.02.5 Engineering. The contractor shall determine the asphalt content and mixing time of the pre-coated aggregate to obtain a uniform and complete pre-coating. Samples of the same shall be forwarded to the Engineer for approval.

Design of the rubberized asphalt chip seal surface treatment shall be the responsibility of the contractor. The application rate of the rubberized asphalt shall be at least 0.60 gallons per square yard. The application rate of the pre-coated cover aggregate shall be between 30 and 40 pounds per square yard. No later than two weeks before work commences, the contractor shall submit for the approval of the Engineer the surface treatment design, with supporting test data, specifying the additives for the rubberized asphalt, application rate of the rubberized asphalt, and the source, composition, and application rate of the cover aggregate.

Samples of each material shall be included with the submittal. Once the materials and design are approved, no substitution will be permitted unless approved by the Engineer.

412.02.6 Rubberized Asphalt. Granulated rubber shall be added to the PG58-28 asphalt cement at a rate of 20 ± 3% by total weight (i.e., asphalt cement plus granulated rubber).

The supplier of the rubberized asphalt shall certify the percent of granulated rubber in the blend.

The temperature of the asphalt cement shall be between 350ºF and 425ºF at the time the granulated rubber is added. The asphalt cement and granulated rubber shall be combined and mixed together in a blender unit and reacted for a minimum of one hour. The temperature of the rubberized asphalt shall be above 325º F during the reaction period.

412.02.7 Delays. When a job delay occurs after full reaction, the rubberized asphalt may be allowed to cool. The rubberized asphalt shall be reheated slowly just prior to application, but not to a temperature exceeding 375ºF. An additional quantity of granulated rubber or additive not exceeding 3% by volume of the rubberized asphalt may be added after reheating.

412.02.8 Field Viscosity Tests. Viscosity tests shall be run by the contractor on each load of rubberized asphalt using a Haake-type field viscometer. One viscosity test shall be run prior to, and another after, the addition of diluent (if used). The viscosity of the final product shall be in the range of 1000 to 3000 centipoise.

412.03 CONSTRUCTION METHODS

412.03.1 Equipment

a. Mechanical Blender. A mechanical blender for proper proportioning and thorough mixing of the asphalt-cement and granulated rubber is required. This unit shall be equipped with: an asphalt totaling meter (gallons); a flow rate meter (gallons per minute); a positive displacement auger to feed the rubber properly to mixing chamber at the specified rate; and a static motionless mixer. The blender will have a separate asphalt cement feed pump and finished product pump to maximize production, and shall be capable of providing 100% proportional mix at any given time during the blending cycle; supporting documentation from the manufacturer shall be submitted to the Engineer.

b. Distributor Truck. On projects exceeding 35 tons of rubberized asphalt, at least two pressure-type bituminous distributor trucks in good condition will be required. The distributor shall be equipped with an internal heating device capable of heating the material evenly up to 425ºF, an internal agitation unit capable of maintaining a proper mix of asphalt cement and granulated rubber, have adequate pump capacity to maintain a high rate of circulation in the tank and to spray the rubberized asphalt at a viscosity of 1000 to 3500 centipoise, and have adequate pressure devices and suitable manifolds to provide constant positive cut-off to prevent dripping from the nozzles.

The distributor shall be equipped with an electronically controlled computerized compensation unit for controlling application rates at various width and speed changes. The application unit shall have electronic controls and a digital read-out installed and operated from the inside of the cab of the distributor. The distributor bar shall be fully circulating. Any distributor that produces a streaked or irregular distribution of the material shall be promptly repaired or removed from the project.

The distributor equipment shall include a tachometer, pressure gauges, volume measuring devices, and a thermometer for reading temperature of tank contents. Controls for the width and rate of spray from the spray bar shall be located in the cab of the truck, and shall enable uniform applications to be made at the specified rate per square yard within a tolerance of 0.05 gallons per square yard.

A "bootman" shall accompany the distributor and ride in a position so that all spray bar nozzles are in full view and readily accessible for unplugging.

c. Hauling Equipment. Trucks for hauling cover aggregate shall be rear discharge conveyor-fed or "live bottom" trucks and shall be equipped with a device to lock onto the hitch at the rear of the aggregate spreader to prevent spillage.

Sufficient hauling vehicles will be available to ensure continuous operation of the distributor and aggregate spreader.

d. Aggregate Spreader. The aggregate spreader shall be hydrostatically driven and self-propelled. It must be equipped with a hydraulically controlled variable adjustable head that is capable of spreading cover aggregate in widths from 4.5 to 18 feet. The spreader shall be mounted on pneumatic tires, and shall apply the cover aggregate on the road surface in a manner that ensures that the tires do not contact the road surface until after the cover aggregate has been applied. The unit shall be equipped with an electronic radar type sensor used to measure ground speed and that will automatically adjust the cover aggregate application rate depending on width of application and the speed of the spreader. It shall have the ability to apply cover aggregate at a uniform coverage on any grade from 0 - 6%. The spreader shall be equipped with an integral hopper with a minimum capacity of 5 tons of cover aggregate which shall be filled by trucks in a manner which ensures that the truck tires never come in contact with rubberized asphalt treated road surfaces until the cover aggregate has been properly applied. To maintain constant cover aggregate application, a self-locking truck hitch will permit towing of aggregate trucks without stopping the spreader. It will be capable of maintaining positive engagement over irregular terrain.

e. Pneumatic Tire Rollers. A minimum of two self-propelled, multiple wheel pneumatic tire rollers shall be used. Each shall weigh a minimum of 10 tons, have a total compacting width of at least 56 inches, and a minimum tire pressure of 100 psi.

412.03.2 Weather Limitations. The rubberized asphalt shall not be applied when weather conditions are unfavorable to obtaining a uniform spread. Construction shall proceed only when the surface temperature is at least 50ºF and rising. No water or moisture shall be present on the road surface.

412.03.3 Surface Preparation. The area to be sealed shall be swept and thoroughly cleaned of vegetation, debris, loose aggregate and soil, particularly soil that is bound to the surface. All cracks shall be thoroughly cleaned. All localized depressions, trench cuts, utility settlements, and joint settlements shall be brought to grade with hot mix Type I-2 shim course. A tack coat shall be applied to the surfaces before the shim course is placed. High spots, localized bumps and joints shall be brought to grade by milling or other treatments as approved by the Engineer. At the limits of the work, there shall be a smooth milled transition of the profile between the existing pavement and the rubberized asphalt chip seal. All thermoplastic pavement markings shall be removed and disposed off site. Manholes, valve boxes and other service entrances will be protected from the applied material. Bridge joints, appurtenances, drainage openings, etc., shall be covered and sealed so as not to clog or permit the entry of loose aggregate. Prior to application of the rubberized asphalt chip seal, the Contractor shall obtain from the Engineer approval and acceptance of the surface preparation.

412.03.4 Construction Procedures

a. Treatment of Distressed Areas. Prior to rubberized asphalt chip sealing of the entire roadway within the specified limits, a rubberized asphalt chip seal shall be applied to any distressed areas within these limits, as directed by the Engineer. The Construction Procedure shall be as specified under Rubberized Asphalt Application, Aggregate Application, and Rolling. This quantity of work shall be measured and paid under **Sections 412.04** and **412.05** of this specification.

b. Rubberized Asphalt Application. The rubberized asphalt shall be applied uniformly at double coverage at a temperature of 325ºF to 425ºF at the approved design application rate within a tolerance of ± 0.05 gallons per square yard. The application rate shall be not less than 0.60 gallons per square yard.

Longitudinal joints shall be reasonably true to line and parallel to centerline. Where any construction joint occurs, the edges shall be broomed back and blended so there are no gaps and the elevations are the same, and free from ridges and depressions. Longitudinal joints shall be overlapped from 4 to 6 inches.

During application, adequate provision shall be made to prevent marring and discoloration of adjacent pavements, curbing, structures, vehicles, foliage or personal property.

c. Cover Aggregate Application. The application of cover aggregate shall follow as close as possible behind the application of the rubberized asphalt which shall be applied no further in advance of the aggregate spreader than can be immediately covered. Construction equipment or other vehicles shall not drive on the uncovered rubberized asphalt. The cover aggregate shall be spread uniformly and completely across the hot rubberized asphalt by a self-propelled spreader at the approved design application rate within a tolerance of ± 5 pounds per square yard. In no case shall the application rate shall be less than 30 pounds per square yard. Any deficient areas shall be covered with additional cover material to provide complete coverage.

d. Rolling. Rolling with pneumatic tire rollers shall commence immediately following spread of pre-coated aggregate. There shall be at least three passes of a roller to embed the cover aggregate particles firmly into the rubberized asphalt. No steel wheel rollers will be allowed.

e. Initial Sweeping. After the aggregate has been rolled and embedded into the rubberized asphalt and the pavement has cooled, all loose material shall be swept and removed offsite. This shall be done at a time and in a manner so as to not displace any embedded aggregate or damage the rubberized asphalt surface. The accumulations of the sweepings shall be collected and disposed properly off site.

f. Site Clean Up. The contractor shall uncover and unseal all drainage openings and clean any covers or grates that the cover aggregate and rubberized asphalt may have adhered to, and shall remove any excess material in areas such as driveways, gutters, and intersections as specified by the Engineer. The contractor shall, on a daily basis, remove any debris associated with the performance of the work.

g. Traffic. Traffic will not be permitted on the surface until the rubberized asphalt binder has cured sufficiently to minimize any dislodging of cover aggregate. The pilot car shall be used to guide and control speed of traffic. The contractor shall be responsible for any damage done to vehicles as a result of the operation. Any damage to the rubberized asphalt chip seal shall be repaired by the contractor, to the satisfaction of the Engineer and at no additional cost to the State.

h. Post Placement Sweepings. There shall be post placement sweepings at the following times:

1. Seven to ten days after the rubberized asphalt chip sealing operation;
2. Three to five weeks after the rubberized asphalt chip sealing operation;
3. At the end of the first winter after the rubberized asphalt chip sealing operation.

For each sweeping, all loose cover aggregate shall be removed from the pavement surface, including the shoulders. The accumulations of sweepings shall be collected and properly disposed off-site.

412.04 METHOD OF MEASUREMENT

"Rubberized Asphalt Chip Sealing" will be measured by the number of square yards of rubberized asphalt chip seal completed in place in accordance with the contract or as directed by the Engineer.

412.05 BASIS OF PAYMENT

The accepted quantities of "Rubberized Asphalt Chip Sealing" will be paid for at the contract unit price per square yard of the type and application rate specified. The price so-stated shall constitute full and complete compensation for traffic control and pilot car; mobile phones; surface preparation; furnishing, transporting, handling, placing and rolling the material specified; initial sweeping and removal of excess aggregate; site clean up; furnishing of all labor, tools, equipment and incidentals for the satisfactory completion of this item; and all other work not specifically identified in the Contract Provisions as separate items of work.

The shim course, including tack coat, and each post placement sweeping will be paid for under separate items in the contract.

Ten percent of the total amount due the contractor will be withheld until the final sweeping and at least 60 days after all the rubberized asphalt chip seal locations have been open to traffic and it has been determined that the rubberized asphalt chip seal is performing satisfactorily.

803.0300

PARTIAL REMOVAL AND DISPOSAL OF EXISTING CONCRETE MASONRY

DESCRIPTION:

This work shall consist of the removal and disposal of existing structure concrete and associated items as described herein to the payment limits as shown on the Contract Plans and/or as directed by the Engineer.

The areas of "Partial Removal of Existing Concrete Masonry" shall be the areas of deck, sidewalk, and parapet, concrete at fixed or expansion joints, and all joint hardware cast within or attached to the concrete, including adjacent traffic plates, trough assemblies, hardware at curbs and sidewalks/safety walks, reinforcing steel, and portions of granite bridge curbing (to the nearest joint) and other components, to the limits shown on the Contract Plans. This item of work shall not include removal of deteriorated concrete for deck repairs. Removal of concrete for deck repairs is paid for separately under the applicable deck repair items.

Stud shear connectors, if encountered, and longitudinal reinforcing steel in the deck are to remain in place unless the plans designate otherwise. Stud shear connectors damaged by the Contractor during the removal of concrete shall be replaced in accordance with the details on the Contract Drawings at no additional expense. Scuppers shall be removed and disposed when so specified on the Contract Drawings. Bridge rail shall be temporarily supported as required to complete the work. Bridge rail anchorage shall be replaced where required, and the rail shall be reset as an incidental item of work.

The areas of "Partial Removal of Existing Concrete Masonry" shall also include the removal and disposal of such items or portions of such items as backwall concrete, approach sidewalk concrete, parapets, walls, sidewalks, footings, abutments and associated reinforcing steel to the limits indicated on the Contract Plans.

All utility ducts and fittings in the sidewalks, safety walks and backwalls are to remain in place unless otherwise designated on the plans. Any damage to existing utility lines shall be repaired by the Contractor to the satisfaction of the Engineer and the respective Utility Company.

The work shall also include the cutting of reinforcing steel, where required, and the surface preparation of reinforcing steel and concrete prior to placing new concrete.

CONSTRUCTION METHODS:

The concrete shall be saw cut square to a minimum depth of 3/4" along the limits of the concrete removal, as indicated on the Plans or as directed by the Engineer. The Contractor shall then remove all concrete, specified reinforcement, bridge curbs and deck joint hardware by means of suitable power and hand tools which will not cause over-breakage, and properly dispose of the material in a manner satisfactory to the Engineer. All repairs resulting from over-breakage shall be performed to the satisfaction of the Engineer at no additional payment. All work shall proceed in accordance with the Traffic Control plans and the Sequence of Construction, as per the Plans. The removal of concrete adjacent to the fixed or expansion joints, along with all associated hardware, shall be performed in stages as defined by the Plans and/or Sequence of Construction.

The Contractor shall submit to the Engineer for approval, at least 30 calendar days prior to the commencement of work, the methods and equipment to be used for the removal and disposal of the items detailed in this Specification, including any special removal methods adjacent to existing utility lines, the disclosure of the Contractor's proposed disposal area(s), and the methods and shop drawings for temporary shielding. These approvals, however, shall in no way relieve the Contractor of sole liability for damages resulting from his operations.

When required by the Contract Documents, the Contractor shall erect and maintain a temporary shield system to insure that no materials, debris, or equipment will fall to the ground or below the structure, or damage the structure or utilities supported beneath the deck. Shop drawings shall be submitted for approval, showing the details and design of the shield system. The system shall be designed for the anticipated weight of all material to be supported, but not less than a live load of 100 psf. Any materials, debris, or equipment that accidentally fall to the ground below the structure shall be immediately retrieved and disposed of properly. At no time shall the temporary shield system extend below the bottom of the bottom flanges of the beams within the travel lanes of the roadway below. No concrete removal operations shall commence in areas where shielding is required until the shielding is installed to the satisfaction of the Engineer.

Care shall be taken during the removal of the designated portions of the structure to avoid damaging the portions that are to remain. The pneumatic hammer used to remove concrete near reinforcing steel that is to remain shall not be heavier than the nominal 30 pound class. Chipping hammers or mechanical chipping tools to remove concrete beneath reinforcing steel shall not be heavier than the nominal 15 pound class. These power-drive hand tools shall never be placed in direct contact with the reinforcing steel that is to remain. If in the opinion of the Engineer, the removal operation causes excessive damage to portions of the concrete which is to remain, the Contractor shall cease his operation until such time that an alternate removal method has been proposed by the Contractor and approved by the Engineer. Any resulting delays in the concrete removal operation shall be the sole responsibility of the Contractor.

All Utility Companies shall be given a minimum of forty-eight (48) hours advance notice of concrete removal operations to be performed adjacent to their respective utility lines. This notice will also apply in the case of any deactivation of utility lines which may be required by the Contractor. The Contractor shall confirm the location, materials, and status of each utility line with the respective Utility Companies prior to any concrete removal.

Special concrete removal methods shall be used during the locating and removal of concrete around existing utilities. These methods may be limited to chipping hammers or small pneumatic hammers posing minimal risk of damage to the utility lines. The Contractor shall submit these special removal methods to the Engineer for approval prior to any concrete removal. The Contractor may, at the discretion of the Engineer, leave a minimal cover of existing concrete around the ducts (thereby leaving the ducts in place), provided that the new concrete section is of adequate thickness (minimum 4" from top of existing concrete to top of proposed sidewalk), and that a suitable bonding agent is applied at the interface of the old and new concrete. When required, the Contractor shall provide temporary supports for any utility ducts left unsupported during construction.

All ducts, including inactive or empty ducts, which are damaged as a result of the Contractor's operations shall be repaired to the satisfaction of the Engineer and the respective Utility Company at no additional cost. This repair work may include the installation of expansion fittings, backwall sleeves and other incidental hardware, as required.

The remaining concrete surfaces shall be cleaned of oil, solvent, grease, dirt, dust, bitumen, laitance, loose particles, and other foreign matter. The surface cleaning shall be accomplished by means of sandblasting, wire brushing, vacuuming, blowing the area with compressed air, or by a combination of these. When compressed air is used, care shall be taken to avoid deposits by the air pump. All sound concrete surfaces on which new concrete is to be placed shall be roughened by mechanical means approved by the Engineer.

Loose and small concrete fragments shall be cleaned from reinforcing steel, stud connectors, and girder top flanges left in place by means of sandblasting and vacuuming. Prior to sandblasting, all petroleum contamination shall be removed by appropriate solvent or detergent cleaning operations. Reinforcing steel and girder top flanges shall be sandblasted in accordance with SSPC-SP-6, Commercial Blast Cleaning, to remove all contaminants, rust and rust scale. Any surface contamination not removed during sandblasting shall be removed in accordance with SSPC-SP-1, Solvent Cleaning. When using sandblasting equipment, all work shall be shielded for the protection of the public.

Existing reinforcing steel to be embedded in new concrete shall not be bent or damaged during the removal operations. All damaged reinforcing steel shall, under the direction of the Engineer, be repaired or replaced by the Contractor at his own expense. Cutting of reinforcing steel shall be accomplished by a method approved by the Engineer. Flame cutting of reinforcing steel will not be permitted.

The Contractor shall insure that his removal and disposal operations do not cause damage to the existing structure or to adjacent property. Any resulting damage shall be repaired to the satisfaction of the Engineer and property owner(s) at the Contractor's expense.

All removed materials shall be taken from the site as the work progresses. Storing or burying of material/debris on site will not be permitted except with the prior approval of the Engineer.

All concrete removal or cleaning/sand blasting, etc., that effects the painted surfaces of the structural steel shall be performed in a manner that complies with all applicable State and Federal health and environmental regulations. Removal of asbestos materials or lead based paint if required, will be paid for separately under the applicable contract items.

The Contractor shall provide a means of dust control satisfactory to the Engineer, including the use of water and/or any alternate methods as may be specified in the Plans.

METHOD OF MEASUREMENT:

"Partial Removal of Existing Concrete Masonry" will be measured for payment by the cubic yard (CY) of concrete removed and disposed of in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT:

The accepted quantity of "Partial Removal of Existing Concrete Masonry" will be paid for at the contract unit price per cubic yard as listed in the Proposal. The price so-stated constitutes full and complete compensation for all labor, tools, materials, equipment, disposal, saw cutting, surface preparation of reinforcing steel and concrete surfaces, removal of all concrete and incidental items, saw cutting of reinforcing steel, replacement of damaged studs and reinforcing steel, removal and disposal of scuppers, repair of damaged utility ducts, temporary utility supports, utility expansion fittings, sleeves, and incidental hardware, resetting of bridge rail, coordination with owners and agencies, water for dust control and all other incidentals necessary to finish the work as shown on the Plans and to the satisfaction of the Engineer.

Removal of asbestos materials or lead based paint if required, will be paid for separately under the appropriate pay item(s) listed in the Proposal.

The installation and removal of temporary protective shielding if required, will be paid for separately under the appropriate pay item(s) listed in the Proposal.

803.0400

CLEANING BRIDGE BEAM SEATS

DESCRIPTION. Work under this item shall consist of cleaning the existing bridge beam seats at piers and abutments, and the disposal of sand, bird excrement, feathers, nests, etc. and all other debris resulting from the cleaning operation. Also included shall be the installation and removal of temporary protective shielding as shown on the plans, to prevent debris from falling onto adjacent waterways and/or roadways and sidewalks. The contractor is herewith advised that the debris to be removed from bridge beam seats may contain bird excrement, feathers, nests, etc, which may contain bacterium considered by OSHA to be an occupational hazard. The contractor shall adhere to the latest provisions of sections 5(a)(1), 1910.134, 1926.95, and 1926.103 of the Occupational Safety and Health Act of 1970 for protecting workers.

A beam seat consists of the entire horizontal surface from end to end of a pier or abutment. The area to be cleaned also includes the bearings and the immediate ends of beams, which may contain debris. This work shall include all materials, equipment, labor and other incidentals necessary to complete the work to the satisfaction of the Engineer.

MATERIALS. The Contractor shall supply water and chlorine bleach as required for the washing operation and for the spraying of debris. Plastic or Canvas tarps, plywood, or similar materials as specified in the contract provisions, shall be provided to contain debris.

CONSTRUCTION METHODS. Abutment and pier seats shall be thoroughly cleaned and all sand, debris, bird excrement, nests, feathers etc, be carefully removed and properly disposed. Prior to removal, all material shall be wet down using a pressurized garden tank type sprayer with a solution of 1 part chlorine bleach to 10 parts water to minimize any airborne dust potentially containing bacterium. Debris shall be removed by shoveling or scraping using hoes, shovels, or by other approved methods, after which all cleaned surfaces shall be high-pressure water washed (minimum pressure 1500 psi, maximum pressure 3000 psi).

The Contractor shall take all precautions and perform all work in such a manner as to prevent damage to the remaining portions of the structure. Temporary protective shielding shall be installed to the limits indicated on the plans to prevent the fall of material onto the waterway and/or roadway and sidewalk areas below. All damage incurred as a result of the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer at no additional expense to the Department.

The contractor shall also adhere to the latest OSHA Standards 1926.95 for worker personal protective equipment and 1910.134 and 1926.103 for respiratory protection and, is referred to OSHA Publications 3079 and 3151. Workers shall wear (HEPA filter) masks, gloves, goggles, protective suits and, use other personal protective equipment as necessary to conform with all applicable OSHA regulations. All material removed shall be packaged and transported in accordance with 49 CFR 172, 173, 177 and, 178 and, shall be disposed at a facility approved for disposal of hazardous material.

Upon completion of the work, all temporary installations and debris shall be removed and the work area restored to the satisfaction of the Engineer.

METHOD OF MEASUREMENT. "Cleaning Bridge Beam Seats" will be measured per each bridge cleaned in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT. The accepted quantity of "Cleaning Bridge Beam Seats" will be paid for at the respective contract unit price per each as listed in the Proposal. The price so-stated constitutes full compensation for all labor, tools, materials, equipment, removal and disposal of all sand, bird excrement, nests and all other material and debris resulting from the cleaning operation, installation and removal of temporary shielding, and all other incidentals necessary to complete the work to the satisfaction of the Engineer.

808.1860

**CONCRETE ARCHITECTURAL TREATMENT
FORM LINER FINISH**

DESCRIPTION. Work under this item shall include all labor, materials and equipment required to provide a Concrete Architectural Treatment on the exterior face of concrete surfaces indicated on the plans. The Architectural Treatment shall be achieved through the use of form liners as described herein and as shown on the contract plans.

MATERIALS.

Release Agent: Compatible with the form liner and all other components of this work.

Form Liner: Form liners shall be constructed of high-strength urethane and shall attach to the concrete formwork. They shall be of the single-use type and from the same manufacturer. Form liners shall produce a surface pattern as shown on the plans.

CONSTRUCTION METHODS.

The Contractor shall be trained by the manufacturer in the use of form liners for the intended application. The form liner manufacturer and installer shall have a minimum of three (3) consecutive years experience in textured concrete construction. Evidence shall be furnished to the satisfaction of the Engineer that the products and their installation have been successfully utilized in similar applications.

Prior to construction, the Contractor shall present a sample panel to the Engineer for approval. The sample shall include a butt joint to ensure that the form liner panels produce a consistent surface pattern and appearance without any visible seams. The sample panel shall be a minimum size of five (5) square-feet.

The Contractor shall submit Shop Drawings for the entire Concrete Architectural Treatment system in accordance with the provisions of Subsection 105.02 of the Standard Specifications. The Engineer shall consult with the RIDOT Historical Preservation Specialist if required, and shall review the Shop Drawings and samples for compliance with the specifications.

The Concrete Architectural Treatment shall be applied to the exterior face of concrete surfaces within the limits shown on the Plans to a minimum of 1’-0” below the finish grade.

Form liners shall be applied per the manufacturer’s recommendations, and in accordance with the following provisions:

Form liners shall be mated with the adjacent panels to produce a consistent pattern and shall be placed adjacent to each other with a 1/8" seam or less. The form liners shall be securely attached to the forms per the manufacturer’s recommendations. Wall ties shall be coordinated with the form liner system.

Form liners shall be rigid and capable of withstanding the anticipated concrete placement pressures without leakage, which could cause physical or visual defects, and should be able to be removed without causing concrete surface deterioration or weakness in the substrate. Form release agents, form stripping methods and patching materials, as well as related construction materials, shall be compatible with all other elements of Concrete Architectural Treatment.

Form liner butt joints shall be carefully blended into the approved pattern. No visible vertical or horizontal seams or conspicuous form marks created by butt-joined form liners will be accepted. The finished concrete surface shall have a finished texture and continuous pattern, in accordance with the information shown on the plans or as directed by the Engineer.

The use of wall ties that result in a portion of the tie being permanently embedded in the concrete shall require approval by the Engineer prior to the commencement of the work. Wall ties shall be provided with break set backs of 1" minimum from the finished concrete surface. The wall tie holes shall be placed in the high point of the rustication or mortar joint.

Concrete placement shall be in accordance with the provisions of Subsection 808.03.5 of the Standard Specifications, with an emphasis on the importance of proper vibration of the concrete next to the form liner to ensure that no honeycombs or other deficiencies occur in the face of the concrete.

After stripping the forms and form liners, the concrete surface shall be cleaned and shall be free of all laitance, dirt, dust, grease, release agents, efflorescence and any other foreign or deleterious materials.

Sandblasting shall not be permitted for cleaning concrete surfaces; pressure washing with water is the preferred method for removing laitance. When pressure washing is to be used, it shall be performed in accordance with specification 820.0200, High Pressure Water Cleaning of Concrete Surfaces. The completed surface shall be free of blemishes, discolorations, surface voids greater than 3/8" in diameter and conspicuous form marks. The cleaning process shall not diminish the "rustic" appearance created by the form liner.

Materials shall be furnished, prepared, applied, cured and stored according to the product manufacturers' directions.

When directed by the Engineer, the Contractor shall have the manufacturers' technical representatives available to answer questions and/or make recommendations prior to and during the work operations.

METHOD OF MEASUREMENT. "Concrete Architectural Treatment – Form Liner Finish" will be measured by the number of square feet complete, in-place and accepted in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT. "Concrete Architectural Treatment – Form Liner Finish" will be paid for at the contract unit price per square foot as listed in the Proposal. The price so-stated constitutes full and complete compensation for furnishing and installing the Concrete Architectural Treatment and for all labor, materials, tools, equipment, and all other incidentals necessary to finish the work, complete and accepted by the Engineer. Pressure washing of concrete surfaces will be paid for separately under the applicable bid item(s) in the Proposal.

820.0200

HIGH-PRESSURE WATER CLEANING OF CONCRETE SURFACES

DESCRIPTION. This work shall consist of removing dirt, organic growth such as moss or lichens, efflorescence and all other accumulated foreign matter from concrete surfaces through the application of a high-pressure water spray to the affected surfaces. The limits of this work shall be as indicated on the plans and/or as directed by the Engineer, and shall be completed to the satisfaction of the Engineer prior to beginning any repair or rehabilitation work. The intent of this work is to produce a sufficiently clean surface for color matching of replacement and repair work, the application of concrete sealers, or other structural repair or rehabilitation work as specified in the contract documents.

EQUIPMENT.

Equipment shall be operated by qualified personnel.

The high-pressure water cleaning equipment shall have sufficient controls to vary the water pressure such that it can be adjusted to clean the concrete surfaces without damaging the surface being cleaned. The equipment shall produce a maximum pressure of up to 3000 psi, and shall have a functional pressure gauge and control incremented in a manner such that the pressure can be adjusted and maintained consistently. A sufficient variety of nozzle tips and accessories shall be available to ensure that the spray can be applied uniformly to all applicable parts of the structure. The tip shall not concentrate the spray at less than 25 degrees to the surface.

CONSTRUCTION METHODS.

The Contractor shall, in the presence of the engineer, perform a test cleaning in an inconspicuous area of the structure for the purpose of establishing the appropriate pressure to produce a sufficiently clean and undamaged surface. The initial pressure for the test area shall start at approximately 500 psi and be gradually increased as necessary until the surface has been adequately cleaned to the satisfaction of the engineer. When the test area has been sufficiently cleaned, the engineer shall record the pressure, nozzle used, angle of impingement of the water stream, approximate cleaning rate per square foot, and other pertinent information for reference and inspection during the course of the cleaning operations. The contractor shall provide a supply of clean potable water for the operation. No additives such as de-greasers, chemical cleaners, detergents, or abrasives shall be combined with the water used for cleaning. Cleaning of concrete surfaces shall be accomplished by moving the wand in a smooth stroke to achieve uniform and thorough cleaning over the entire surface without pitting or marring.

The Contractor shall exercise due caution and take all necessary precautions to prevent property damage and to protect the general public from exposure to spray, debris and any other potentially hazardous conditions. In cases where the plans and/or contract documents specify the use of temporary shielding or other similar measures to protect property and/or the general public, the Contractor shall install, at all designated locations, the required temporary protective measures as indicated and detailed on the plans. The installation of temporary protection shall be considered incidental to the cleaning operation.

METHOD OF MEASUREMENT. "High Pressure Water Cleaning of Concrete Surfaces" will be measured by the number of square feet of surface actually cleaned in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT. "High Pressure Water Cleaning of Concrete Surfaces" will be paid for at the contract unit price per square foot as listed in the proposal. The price so-stated constitutes full and complete compensation for all materials, tools, equipment, labor and all incidentals, including the installation and removal of temporary protective measures, necessary to finish the work, complete and accepted by the Engineer.

820.0300

HIGH-PRESSURE WATER CLEANING OF BRIDGE STRUCTURES

DESCRIPTION.

This work shall consist of the removal of all dirt, organic growth, efflorescence and all other foreign particles, including sand, salt and other debris from steel or concrete bridge girders, cross frames, trusses, pier tops, utility supports, utility pipes and conduits, bearing devices, beam seats, scuppers and other bridge components through the application of a high-pressure water spray to the affected surfaces. The limits of this work shall be as indicated on the plans and/or as directed by the Engineer.

The Contractor shall not remove or attempt to remove paint, sealant, or any other weatherproof material or waterproof coating.

MATERIALS AND EQUIPMENT.

The cleaning equipment shall include the necessary high-pressure water cleaning equipment and all ancillary equipment necessary to flush, clean and remove all foreign material from the bridge structure, including hand tools, compressors, water tanks and water pumps. The contractor shall determine the method and equipment, subject to the Engineer's approval, which is best suited to successfully complete the cleaning operation.

The high-pressure water cleaning equipment shall have sufficient controls to vary the water pressure such that it can be adjusted to clean the surfaces without damaging the structure. The equipment shall be capable of producing a water pressure of up to 3000 psi, and shall have a functional pressure gauge incremented in a manner such that the pressure can be adjusted and maintained consistently. A sufficient variety of nozzle tips and accessories shall be available to ensure that the spray can be applied uniformly to all applicable parts of the structure. The tip shall not concentrate the spray at less than 25 degrees to the surface.

CONSTRUCTION METHODS.

The equipment shall be operated by qualified and experienced personnel.

When required by the engineer, the contractor shall conduct a test cleaning in an inconspicuous area of the structure for the purpose of establishing the appropriate pressure to produce a sufficiently clean and undamaged surface. The initial pressure for the test area shall start at approximately 500 psi and be gradually increased as necessary until the surface has been adequately cleaned to the satisfaction of the engineer. The water pressure shall be sufficient to remove the accumulated material without damaging the paint coverage of structural steel. When the test area has been sufficiently cleaned, the engineer shall record the pressure, nozzle used, angle of impingement of the water stream, approximate cleaning rate per square foot, and other pertinent information for reference and inspection during the course of the cleaning operations.

The cleaning shall proceed in an orderly manner, subject to the limitations of traffic control. No residue from the cleaning operation shall be left on the surfaces to be cleaned at the completion of the operation. The Contractor shall provide a supply of clean water for the operation. No additives such as degreasers, chemical cleaners, detergents, or abrasives shall be combined with the water used for cleaning. Cleaning of concrete surfaces shall be accomplished by moving the wand in a smooth stroke to achieve uniform and thorough cleaning over the entire surface without pitting or marring.

The solid material removed from the bridge structure by the cleaning operation shall be collected and disposed of at approved waste sites in accordance with all applicable Federal and local regulations. Under no circumstances will any wastewater or debris from the cleaning operation be allowed to enter adjacent water bodies.

The Contractor shall exercise due caution and take all necessary precautions to prevent property damage and to protect the general public from exposure to spray, debris and any other potentially hazardous conditions. In cases where the plans and/or contract documents specify the use of temporary shielding or other similar measures to protect property and/or the general public, the Contractor shall install, at all designated locations, the required temporary protective measures as indicated and detailed on the plans. The installation of temporary protection shall be considered incidental to the cleaning operation.

METHOD OF MEASUREMENT.

"High-Pressure Water Cleaning of Bridge Structures" will be measured by the number of bridge(s) actually cleaned in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT.

"High-Pressure Water Cleaning of Bridge Structures" will be paid for at the contract unit price per each as listed in the proposal. This price so-stated shall constitute full and complete compensation for all materials, labor, tools, equipment and all incidentals, including the installation and removal of required temporary protective measures, necessary to finish the work, complete and accepted by the Engineer.

823.1755

ASPHALTIC EXPANSION JOINT SYSTEM MATERIALS AND WORKMANSHIP WARRANTY

DESCRIPTION. The materials and workmanship pavement warranty shall consist of the warranty bond and the terms of this special provision, including the appendix. This special provision establishes the common terms and definitions applied to all projects requiring a warranty (the warranted work). The appendix contains information unique to the asphaltic expansion joint system. The Materials and Workmanship Warranty warrants the Department against defects in materials and workmanship.

DEFINITIONS.

1. Materials & Workmanship Warranty: The Contractor is responsible for correcting defects in the asphaltic expansion joint system caused by elements within the Contractor's control (i.e., the materials supplied and the workmanship) during the warranty period. Since the Department is responsible for the bridge design, the Contractor assumes no responsibility for defects that are design related. If a defect is attributable to both, the materials and/or workmanship, and the design, responsibility for correcting the defect shall be shared by the Department and the Contractor; the Contractor is responsible for the percentage of fault attributable to the workmanship and/or materials, and the Department is responsible for the percentage of fault attributable to the design.

2. Acceptance Date of Construction: The date when the warranted work is complete and confirmed in writing on the initial acceptance document, by the Department, to be in compliance with the contract specifications and is open to traffic. This is the date of initial acceptance and constitutes the start date for the warranty period. There may be more than one acceptance date of construction for a project.

3. Warranty Bond: A bond issued by a surety which guarantees that the warranty requirements will be met.

4. Conflict Resolution Team (CRT): The five-person team responsible for resolving disputes between the Department and the Contractor regarding any claim of non-compliance with the warranty requirements.

5. Warranty Work: Corrective action taken to bring the warranted work into contract compliance.

INITIAL ACCEPTANCE. The Department and the Contractor shall jointly review all completed warranted work, or a portion thereof, as determined by the Department. If the work does not meet contract requirements, the Contractor shall make all necessary corrections, at their expense, prior to initial acceptance. Initial acceptance will occur as soon as the Department confirms in writing, on the initial acceptance form that contract requirements have been met for the warranted work. The date on which initial acceptance occurs is termed the Acceptance Date of Construction.

Initial acceptance will be documented and executed jointly by the Department and the Contractor on a form furnished by the Department. A copy of the form will be sent to the Contractor's warranty bond surety agent by the Department. Neither the initial acceptance nor any prior inspection, acceptance or approval by the Department diminishes the Contractor's responsibility under this warranty.

The Department may accept the work and begin the warranty period, excluding any area needing corrective work, to accommodate seasonal limitations or staged construction.

Acceptance of material, in penalty, under the Department's quality assurance program will not relieve the Contractor from meeting the material and workmanship warranty requirements for the accepted material.

WARRANTY BOND. The Contractor shall furnish a single term warranty bond, in an amount stipulated in the appendix, prior to contract award. The effective starting date of the warranty bond shall be the Acceptance Date of Construction. The warranty bond will be released at the end of the warranty period or after all warranty work has been satisfactorily completed, whichever is latest.

RIGHTS AND RESPONSIBILITIES OF THE DEPARTMENT.

The Department:

1. Reserves the right to approve the schedule proposed by the Contractor to perform warranty work.

2. Reserves the right to approve all materials and specifications used in warranty work.

3. Reserves the right to determine if warranty work performed by the Contractor meets the contract specifications.

4. Reserves the right to perform or have performed, routine maintenance during the warranty period, which routing maintenance will not diminish the Contractor's responsibility under the warranty.

5. Reserves the right, if the Contractor is unable, to make immediate emergency repairs to the asphaltic expansion joint system to prevent an unsafe road condition as determined by the Department. The Department will attempt to notify the Contractor that action is required to address an unsafe condition. However, should the Contractor be unable to comply with this requirement, to the Department's satisfaction and within the time frame required by the Department, the Department will perform, or will have performed any emergency repairs deemed necessary. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. Any costs associated with the emergency repairs will be paid by the Contractor if it is determined the cause was from defective materials and/or workmanship.

6. Is responsible for monitoring asphaltic expansion joint system throughout the warranty period and will provide the Contractor all written reports of the system's condition related to the warranty requirements. The Contractor shall not be relieved of any responsibility based upon a claim that the Department failed to adequately monitor the asphaltic expansion joint system to report its findings to the Contractor.

7. Is responsible for notifying the Contractor, in writing, of any corrective action required to meet the warranty requirements.

RIGHTS AND RESPONSIBILITIES OF THE CONTRACTOR.

The Contractor:

1. Shall warrant to the Department that the warranted work will be free of defects in materials and workmanship for a period of five (5) years after completion of joint installation. The warranty bond shall be described on a form furnished by the Department. The completed form shall be submitted to the Department prior to award of contract.

2. Is responsible for performing all warranty work including, but not limited to, maintaining traffic and restoring all associated bridge and pavement features, at the Contractor's expense.

3. Is responsible for performing all temporary or emergency repairs, resulting from being in non-compliance with the warranty requirements, using Department approved materials and methods.

4. Shall notify the Department and submit a written course of action for performing the needed warranty work a minimum of ten calender days prior to commencement of warranty work, except in the case of emergency repairs as detailed in this special provision. The submittal must propose a schedule for performing the warranty work and the materials and methods to be used.

5. Shall follow a Department approved maintaining traffic plan when performing warranty work. All warranty work shall be performed under permit issued by the Department.

6. Is required to supply to the Department original documentation that all insurance required by the contract is in effect during the period(s) that warranty work is being performed, as required by subsection 107.13 of the standard specifications.

7. Shall furnish to the Department, in addition to the regular performance and lien bond for the contract, supplemental performance and lien bonds covering any warranty work being performed. These supplemental bonds shall be furnished prior to beginning any warranty work, using Department approved forms. These supplemental bonds shall be in the amount required by the Department to cover the costs of warranty work.

8. Shall complete all warranty work prior to conclusion of the warranty period, or as otherwise agreed to by the Department.

9. Shall be liable during the warranty period in the same manner as Contractors currently are liable for their construction related activities with the Department pursuant to the standard specifications. This liability shall arise and continue only during the period when the Contractor is performing warranty work. This liability is in addition to the Contractor performing and/or paying for any required warranty work, and shall include liability for injuries and/or damages and any expenses resulting therefrom which are not attributable to normal wear and tear of traffic and weather, but are due to non-compliant materials, faulty workmanship, and to the operations of the Contractor.

QUALITY CONTRAL. The Contractor shall provide an affidavit from the joint manufacturer certifying that the aggregate meets all requirements, and a certificate of compliance from the binder manufacturer certifying that the binder conforms to these Specifications.

At the direction of the Engineer, the Contractor shall arrange for, and have present at the time the first joint-sealing operation is to be performed, a manufacturer's representative knowledgeable in the methods of installation of the joint system. The Contractor shall also arrange to have the representative present at such other times as the Engineer may request.

EVALUATION METHOD. The Department will conduct evaluations of each asphaltic expansion joint system installed under this contract.

WARRANTY REQUIREMENTS. Warranty work will be required when the threshold limit for a condition parameter is exceeded as a result of a defect in material and/or workmanship.

Specific threshold limits and segment limits are covered in the appendix.

To determine whether the failure to meet the warranty criteria is a result of defects in materials and/or workmanship, a joint field investigation by the Department and the Contractor will be conducted. The Department and Contractor may elect to have a forensic investigation conducted. The decision to undertake a forensic investigation, the scope of it, and the selection of the party to conduct it will be agreed to by the Department and the Contractor. If agreement cannot be reached a Conflict Resolution Team (CRT) may be convened in accordance with this special provision. The CRT will then decide the need for a forensic investigation, its scope and the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionately between the Contractor and the Department based on the determined cause of the condition.

During the warranty period, the Contractor will not be held responsible for distresses that are caused by factors unrelated to materials and workmanship. These include, but are not limited to: chemical and fuel spills, vehicle fires, snow plowing, and quality assurance testing such as coring. Other factors considered to be beyond the control of the Contractor which may contribute to distress will be considered by the Engineer on a case by case basis upon receipt of a written request from the Contractor.

CONFLICT RESOLUTION TEAM. The sole responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding application or fulfillment of the warranty requirements. The CRT will consist of five members, as follows:

1. Two members selected, and compensated by the Department.

2. Two members selected and compensated by the Contractor.

3. One member mutually selected by the Department and the Contractor.

Compensation for the third party member will be equally shared by the Department and the Contractor.

If a dispute arises on the application or fulfillment of the terms of this warranty, either party may serve written notice that appointment of a CRT is required.

At least three members of the CRT must vote in favor of a motion to make a decision. The CRT may decide to conduct a forensic investigation, will determine the scope of work and select the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionately between the Contractor and the Department based on the determined cause of the condition.

EMERGENCY REPAIRS. If the Department determines that emergency repairs are necessary for public safety, the Department or its agent may take repair action.

Prior to emergency repairs, the Department will document the basis for the emergency action. In addition, the Department will preserve evidence of the defective condition.

NON-EXTENSION OF CONTRACT. This Special Provision shall not be construed as extending or otherwise affecting the claim process and statute of limitation applicable to this Contract.

MEASUREMENT AND PAYMENT. All costs, including engineering and maintaining traffic costs, associated with meeting the requirements of this special provision are considered to be included in the Contract unit price for the warranted work item regardless of when such costs are incurred throughout the warranty period. These costs include but are not limited to, all materials, labor and equipment necessary to complete required warranty work.

APPENDIX

MATERIALS AND WORKMANSHIP WARRANTY FOR ASPHALTIC EXPANSION JOINT SYSTEM

A1. APPLICATION. This appendix is applicable for performance warranties on asphaltic expansion joint systems. The work consists of the placement of a 20-inch nominal width, or as specified on the plans, of a special asphalt material with elastic properties over concrete deck joints in the space usually occupied by the bituminous wearing surface. This deck joint system is a commercial product and must be installed in strict accordance with the manufacturer's recommendations. Manufacturers of this joint system are included in the RIDOT's List of Approved Materials and Suppliers.

A2. LIMITS OF WARRANTED WORK. The warranted work includes all asphaltic expansion joint systems within the project limits unless otherwise indicated on the proposal.

A3. WARRANTED PERIOD. The length of the warranty will be five years from the acceptance date of warranted work.

A4. AMOUNT OF WARRANTED BOND. The Contractor will supply a warranty bond equal to 100% of the warranted work for asphaltic expansion joint systems.

A5. MATERIALS:

a. Backer Rod. The backer rod material shall be an expanded closed cell polyethylene foam capable of withstanding the temperature of the hot binder material, shall have a diameter 150 percent the width of the joint opening and shall have the following properties:

Density - 2.0 lbs./cu.ft. min. ASTM D1622
Tensile Strength - 25 psi min. ASTM D1623
Water Absorption - 1-percent of weight max. ASTM C509

b. Asphaltic Joint System. The materials for the joint system, both aggregate and binder, shall be provided by one of the manufacturers included in the RIDOT's List of Approved Materials and Suppliers.

1. Binder. The binder shall be a hot applied polymer modified bituminous material conforming to all specifications as detailed in ASTM D3405, and manufactured under strict quality control procedures as approved by the Engineer and meet the following specifications:

Softening Point, (ASTM D36).....180^{o}F min.

2. Aggregate. The aggregate shall be of the Basalt, Gabbro or Granite groups, meeting the manufacturer's size and gradation requirements. All stones shall be crushed, double-washed, dried and delivered to the site pre-weighed in labeled packs. When tested in accordance with AASHTO T-11, the material passing the #200 sieve will be no more than 0.3% by weight of the stone. The broadcast stone for the surface of the joint system will be basalt and shall be sized as to pass the #8 sieve and be retained on the #16.

c. Steel Backing Plate. The backing plate shall conform to requirements of AASHTO M270, Grade 36, Steel, minimum 1/4" thick and shall be galvanized in accordance with AASHTO M232. Holes for locating pins shall be approximately 1-foot center to center along the centerline of the plate, unless indicated otherwise on the Plans.

d. Locating Pins. Locating pins shall be 16d common nails or larger and shall be hot-dipped galvanized in accordance with ASTM A153.

A6. CONSTRUCTION METHODS:

a. Removal of Bituminous Pavement. Saws shall be set to cut the full depth of the bituminous concrete and any membrane present. Bituminous concrete pavement shall be removed from those areas where asphaltic joint material is to be placed by the use of saws and pneumatic hand tools. Variations in the thickness of the bituminous concrete across the road should be considered to insure, where possible, that the deck is not damaged.

b. Joint Preparation.

1. Cleaning. The entire joint must be thoroughly cleaned and dried using a Hot Compressed Air Lance immediately prior to tanking. All loose debris shall be removed from the gap. Care must be taken to ensure that the sawcut surfaces have been thoroughly cleaned of any dust or wet paste from the cutting operation.

2. Caulking. The joint gap shall be caulked with a backer rod as shown on the Plans. It shall be placed in such a manner as to allow for the appropriate placement of the required binder material.

3. Tanking. Immediately after cleaning/caulking, the bottom of the blockout area shall be coated with a layer of hot binder that has been heated in accordance with the manufacturer's recommendations. If a delay greater than one (1) hour occurs between cleaning and tanking, the joint shall be re-cleaned using a Hot Compressed Air Lance as described above.

4. Plating. The gap shall be bridged with three to four feet long steel backing plates. Steel plates shall be located with pins along the centerline. The plates shall be butted to each other and shall not be overlapped. Immediately coat the walls of the blockout area and the bridging plates with binder, making sure that the plate is entirely encapsulated by the binder.

c. Asphaltic Joint Material Preparation.

1. Aggregate. The aggregate must be dried, cleaned and heated in a drum mixer by hot compressed air. The stone shall be heated to a temperature between 375^{o}F (190^{o}C) and the maximum safe binder temperature, as specified by the manufacturer. The temperature shall be monitored with a calibrated infrared thermometer. Under no circumstances shall the binder be mixed with the aggregate if its temperature is above the maximum. All tangible signs of dust must be removed prior to mixing of the binder with the aggregate.

2. Binder. The binder shall be heated to and maintained at the manufacturer's recommended placement temperature in excess of 350^{o}F (177^{o}C). At no time shall the manufacturer's recommended safe heating temperature be exceeded.

d. Material Installation. The method used shall be according to the manufacturer's recommended procedure. Variations from the manufacturer's procedure or from this specification must be approved by the Engineer prior to commencement of work.

1. Placement of the aggregate/binder mix into the blockout area: Binder material shall be added to the mixer just sufficient to thoroughly coat the aggregate. The coated aggregate shall be placed into the blockout in layers as recommended by the joint material manufacturer. The blockouts shall be overfilled with coated aggregate as required to compensate for compaction. Equipment for compaction shall be capable of sufficient compaction force as recommended by the joint manufacturer. Additional binder material shall be screeded over the compacted joint to fill any surface voids.

2. Surface Layer. Accurately measured quantities of hot aggregate shall be mixed with the binder in a rotating drum mixer. The binder should be at the approved temperature to insure complete coating of all the stone. This mix shall be transferred to the joint and leveled to be slightly higher than the adjacent road surface.

3. Compaction. Compaction shall begin immediately after the placement of the material in the blockout, using equipment as specified by the joint system manufacturer and the joint surface made flush with the existing road surface.

4. Screeding. Prior to the final screeding, the surface of the joint and surrounding road shall, if necessary, be dried and cleaned with a Hot Compressed Air Lance. Immediately thereafter a single screed of hot binder shall be applied to fill all surface voids.

5. Joint Sealing. The interface between the joint and the pavement shall be sealed with a 2-inch wide band of the binder, centered on the interface, for the entire length of the joint on both the leading and trailing edges, relative to traffic. The surface adjacent to the interface shall be heated with a Hot Compressed Air Lance to promote adhesion of the binder. Immediately after the application, while the binder is still hot, basalt stone shall be broadcast onto the band. It shall cover 75% of the surface of the band.

6. Opening to Traffic. The joint shall not be opened to traffic before the surface reaches a temperature of 120^{o}F or 30 minutes has elapsed from placing the basalt stone.

e. Equipment. The following equipment is required for the proper installation of asphaltic bridge deck joints:

1. A manually propelled, high speed water cooled saw with diamond tipped blades capable of cutting to the full depth required in one pass.

2. A pneumatic compressor of 185 CFM capacity to power drills and breakers of various sizes with suitable size bits.

3. Two Hot Compressed Air Lances (HCA Lances), each capable of delivering a flame retarded air stream with a temperature of 3,000^{o}F (1,648^{o}C), at a speed of 3,000 feet per second. The use of a torch rather than a Hot Air Lance to heat the block out surfaces is not allowed.

4. A 200-gallon air-jacketed, trailer-mounted melter with two flame baffled L.P. ribbon type burners rated a minimum output of 175,000 BTU which shall apply indirect heat to the melting chamber. The unit shall have automatic temperature controls which can accurately maintain the material temperatures between 100^{o}F and 650^{o}F (38^{o}C and 343^{o}C). A temperature gauge, calibrated to $\pm$ 10^{o}F of actual, must be provided and mounted such that the temperature is clearly visible to the operator and the Engineer.

The burner system shall have a safety pilot capable of shutting off the base supply in the event of a flame-out.

The melter shall be equipped with a horizontally mounted double-paddle, full sweep reversible agitation system which runs the length of the melting chamber and is driven hydraulically with a dedicated engine and compressor. Material delivery shall be by an angled 3-inch discharge port.

5. Storage tanks capable of holding a minimum of 600 pounds propane, 600 pounds oxygen, 200 pounds acetylene.

6. A dedicated drum mixer, with compressed hot air apparatus sufficient to heat the aggregate and aggregate/binder mix in the drum to the specified temperature range.

7. Acetylene cutting torches.

8. An arc welder powered by a suitable generator.

9. 500-gallon capacity water tank fitted with suitable spigots.

10. A hand-held infrared thermometer, calibrated to $\pm$ 10^{o}F.

11. A vibratory plate compactor.

12. A powered roller sufficient to span the width of the joint system in a single pass.

13. In the event of equipment failure during installation, backup equipment must be available, or in the case of a major breakdown, replacement equipment should be on site within 48 hours.

f. Submittals. The Contractor shall submit to the Engineer, for approval at least thirty (30) days prior to start of work, the following: a) The name of Manufacturer and: b) The Manufacturer's Warranty Certificate.

A7. METHOD OF MEASUREMENT: "Asphaltic Expansion Joint System" will be measured by the number of linear feet of such joints actually installed in accordance with the Plans and/or as directed by the Engineer.

A8. BASIS OF PAYMENT: The accepted quantities of "Asphaltic Expansion Joint System" will be paid for at their respective contract unit prices per linear foot as listed in the Proposal. The prices so-stated constitute full and complete compensation for all labor , materials, and equipment, and for all other incidentals required to finish the work, complete and accepted by the Engineer.

A9. WARRANTY PARAMETERS. Condition parameters are used to measure the performance of the asphaltic expansion joint system during the warranty period. Each condition parameter has a threshold limit that defines when corrective action (warranty work) is required.

Definitions.

Debonding: Physical separation of the asphaltic expansion joint from the adjacent vertical face of the pavement or the bridge deck.

Transverse crack: Any open crack that extends more in the transverse (perpendicular to traffic flow) than in the longitudinal direction.

Longitudinal crack: Any open crack that extends more in the longitudinal (parallel to traffic flow) than in the transverse direction.

Perviousness. Absence of watertightness.

Rutting. Depression, displacement, or dislodgment of the asphaltic expansion joint surface.

A10. WARRANTY REQUIREMENTS. The table lists the allowable threshold limit for each condition parameter for each asphaltic expansion joint. If any of the warranty requirements are not met as a result of a defect in materials and/or workmanship, corrective action (warranty work) is required.

WARRANTY REQUIREMENTS

Condition Parameter	Threshold Limit for each Asphaltic Expansion Joint
Debonding (either edge)	5% total for the joint, with no debond greater than two (2) feet.
Transverse cracking	5% total for the joint, with no crack greater than two (2) feet.
Longitudinal cracking	3 times joint longitudinal dimension
Perviousness	Visible seepage of water
Rutting	Maximum depth ½"

A11. CORRECTIVE ACTIONS. The following corrective actions are recommended to outline typical acceptable treatments for the various condition parameters. The Department will accept the listed corrective action if the action addresses the cause of the condition parameter. The Contractor may use an alternative action subject to the Department's approval.

CORRECTIVE ACTIONS

Condition Parameter	Recommended Action
Debonding:	Sawcut and remove the affected area; Replace with new asphaltic expansion joint.
Transverse cracking:	Sawcut and remove the affected area; Replace with new asphaltic expansion joint.
Longitudinal cracking:	Seal
Perviousness:	Seal
Rutting:	Sawcut and remove the affected area; Replace with new asphaltic expansion joint.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
INITIAL ACCEPTANCE FOR WARRANTY

CONTRACT ID:	
CONTRACT SECTION:	**JOB NUMBER:**
SURETY NAME:	
SURETY ADDRESS:	
CONTRACTOR NAME:	
CONTRACTOR ADDRESS:	

IDENTIFY EACH JOB NUMBER, LOCATION AND WORK SEPARATELY

JOB ***NUMBER***	***ROUTE NUMBER***	*CONTROL* ***SECTION***	*WORK TYPE*	*DATE* ***ACCEPTED***	*PROJECT* ***ENGINEER***

INITIAL ACCEPTANCE OF WARRANTY WORK APPROVAL
CONTRACTOR'S SIGNATURE:
ENGINEER'S SIGNATURE:
ACCEPTANCE DATE:

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
WARRANTY BOND

Bond Number_____

KNOWN ALL MEN BY THESE PRESENTS:

That we, _____(hereinafter called the "Principal"), and _____, a corporation duly organized under the laws of the State of_____ and duly licensed to transact business in the State of Rhode Island (hereinafter called "Surety"), are held and firmly bound unto the Rhode Island Department of Transportation (hereinafter called the "Obligee"), in the sum of Dollars ($), for the payment of which sum well and truly to be made, we, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has heretofore entered into a contract with the Rhode Island Department of Transportation dated _____under Rhode Island Contract No. _____and;

WHEREAS, the said Principal is required to guarantee the _____installed under said contract, against defects in materials or workmanship which may develop during the period(s) of _____ years beginning the date(s) of the Acceptance Date of Construction by the Obligee.

In no event shall losses paid under this bond aggregate more than the amount of the bond.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal shall faithfully carry out and perform the said guarantee, and shall, on due notice, repair and make good at its own expense any and all defects in materials or workmanship in the said work which may develop during the period specified above or shall pay over, make good and reimburse to the said Obligee all loss and damage which said Obligee may sustain by reason of failure or default of said Principal so to do, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED HOWEVER, that in the event of any default on the part of said Principal, a written statement of the particular facts showing such default and the date thereof shall be delivered to the Surety by registered mail, promptly in any event within ten (10) days after the Obligee or his representative shall learn of such default and that no claim, suit or action by reason of any default of the Principal shall be brought hereunder after the expiration of thirty (30) days from the end of the warranty period as herein set forth.

Signed this _____day of _____, _____.

Contractor _____

By _____

Surety _____

By _____
Attorney-In-Fact

825.1000

PAINT SYSTEMS FOR STRUCTURAL STEEL

DESCRIPTION: The materials set forth in this Provision are for use in painting new steel, repainting of existing steel or the painting or repainting of steel components, all as designated on the Plans or as directed by the Engineer.

1. New Steel and 100% Bare Existing Steel.

a. Procedure. The procedure for painting of new steel structures after completion of necessary cleaning and surface preparation shall be to provide a shop applied primer, shop or field applied primer touch-up and field applied intermediate and top-coats, all as set forth in **SECTION 825; PAINTING STRUCTURAL STEEL,** of the Standard Specifications.

b. Paint Systems. The Contractor may select any one of the systems listed below provided the components from one system are not intermixed with components from any other system. The system may be solvent-based or waterborne as long as all components of the system are compatible with one another. The VOC content shall be in compliance with **Subsection 825.02.6** of the Standard Specifications, currently 3.5 lbs./gal maximum.

SYSTEM #1: Three (3) Coat Zinc/Epoxy/Urethane System

- Primer	Organic or Inorganic Zinc Rich Primer
- Intermediate	Polyamide Epoxy or Aliphatic Polyurethane
- Top Coat	Aliphatic Polyurethane

Coating System Criteria: The criteria shall be one of the approved systems included on the NEPCOAT (Northeast Protective Coatings Committee) Qualified Products List.

SYSTEM #2: Three (3) Coat Zinc/Acrylic/Acrylic System.

- Primer	Organic or Inorganic Zinc Rich Primer
- Intermediate	Acrylic or Epoxy Acrylic
- Top Coat	Acrylic or Epoxy Acrylic

Acceptance Criteria: (minimums)

	Primer	Intermediate	Top Coat
% Total Solids by Weight	79	59.4	50
% Total Solids by Volume	53	40-48	40
% Pigment by Weight	70	20 - 24	20 - 24
Weight per Gallon, lbs.	19.5	11	10
Viscosity (Stormer @ 77 deg F)KU	59 - 120	85 - 95	80 - 130
Pot Life @ 77 deg F (Hr)	6	8	8
Sag Resistance ((Lenata)	15 - 20	8 - 12	8 - 12
Recommended Mils DFT	3 - 6	2 - 4	2 - 4
Storage Life, mos.	12	12	12

SYSTEM #3: Three (3) Coat Polyurethane Micaceous Iron Oxide (MIO) System.

- Primer	Zinc Based Moisture-Cured Polyurethane
- Intermediate	MIO Moisture-Cured Polyurethane
- Top Coat	MIO Moisture-Cured Aliphatic Polyurethane

Coating System Criteria: The criteria shall be one of the approved systems included on the NEPCOAT (Northeast Protective Coatings Committee)- Qualified Products List.

SYSTEM #4: Three (3) Coat Alkyd/Oil Zinc Hydroxy Phosphite System.

- Primer	Alkyd/Oil Red Iron Oxide - Zinc Hydroxy Phosphite
- Intermediate	Alkyd/Oil Titanium Dioxide - Zinc Hydroxy Phosphite
- Top Coat	Alkyd/Oil Titanium Dioxide - Zinc Hydroxy Phosphite

Acceptance Criteria: (minimums)

	Primer	Intermediate	Top Coat
% Total Solids by Weight	86 +/-2	86 +/-2	70 +/-2
% Total Solids by Volume	72 +/-1	72 +/-1	55 +/-1
% Zinc Metal by Weight	53	52	36
Weight per Gallon, lbs	13	13	10.5
Viscosity(Stormer @ 77 deg.F) KU	75 - 85	75 - 85	70 - 80
Pot Life @ 77 deg F Hr.	----	----	----
Sag Resistance (Lenata)	8	8	8
Recommended Mils DFT	2.5 - 3	2.5 - 3	2.5 - 3
Storage Life, mos.	12	12	12

2. Existing Previously Painted Steel.

a. Procedure. The procedure for repainting existing, previously painted steel after completion of necessary cleaning, surface preparation and repairs shall be the field application of primer touch-up, full primer coat if specified, and intermediate and/or top caots, all as set forth in **SECTION 825; PAINTING STRUCTURAL STEEL** of the Standard Specifications.

b. Paint Systems. The Contractor may select any one of the systems listed below provided the components from one system are not intermixed with components from any other system. The system may be solvent based or waterborne as long as all components of the system are compatible with one another and the existing coating system that is to remain. The system selected should be one that is encapsulating or is surface tolerant and thus provides for reduced surface preparation requirements. The VOC content shall be in compliance with **Subsection 825.02.6** of the Standard Specifications, currently 3.5 lbs./gal maximum.

SYSTEM #1: Three Coat System, Moisture Cured Urethane.

-Primer	Moisture Cured Urethane
-Intermediate	Moisture Cured Urethane
-Top Coat	Moisture Cured Urethane

Note: The individual coats of the system listed above may be supplied with or without zinc, micaceous iron oxide (MIO), aluminum filled pigments or combinations of the same, provided the coats are recommended and produced by the same manufacturer and they all meet the requirement of being a moisture-cured urethane system.

Acceptance Criteria: (minimums)

	Primer	Intermediate	Top Coat
% Total Solids by Weight	87-89 (zinc)	70-81	68-82
79-81 (non-zinc) 70-81	68-82		
% Total Solids by Volume	60-64	51-63	51-63
% Pigment by Weight	73-89	----	----
Weight per Gallon, lbs	20-26 (zinc)	11-15	8-15
10-15 (non-zinc) 11-15	8-15		
Viscosity(Stormer @ 77 deg.F) KU	85-110 (zinc)	---	---
76-95 (Non-zinc) 76-100	70-100		
Pot Life @ 77 deg F Hr.	----	----	----
Sag Resistance (Lenata)	----	----	----
Recommended Mils DFT	2-5	3-4	1.5-4
Storage Life, mos.	6-12	6-12	6-12

SYSTEM #2: Three (3) Coat Alkyd/Oil Zinc Hydroxy Phosphite System.

- Primer	Alkyd/Oil Red Iron Oxide - Zinc Hydroxy Phosphite
- Intermediate	Alkyd/Oil Titanium Dioxide - Zinc Hydroxy Phosphite
- Top Coat	Alkyd/Oil Titanium Dioxide - Zinc Hydroxy Phosphite

Acceptance Criteria: (minimums)

	Primer	Intermediate	Top Coat
% Total Solids by Weight	86 +/-2	86 +/-2	70 +/-2
% Total Solids by Volume	72 +/-1	72 +/-1	55 +/-1
% Zinc Metal by Weight	53	52	36
Weight per Gallon, lbs	13	13	10.5
Viscosity(Stormer @ 77 deg.F) KU	75 - 85	75 - 85	70 - 80
Pot Life @ 77 deg F Hr.	----	----	----
Sag Resistance (Lenata)	8	8	8
Recommended Mils DFT	2.5 - 3	2.5 - 3	2.5 - 3
Storage Life, mos.	12	12	12

SYSTEM #3: Two (2) Coat Epoxy Mastic with Polyurethane, Acrylic, or Epoxy Acrylic Top Coat.

-Spot Primer	Self Priming Epoxy Mastic
-Intermediate	Epoxy Mastic
-Top Coat	Aliphatic Polyurethane or Acrylic or Epoxy Acrylic

Acceptance Criteria: (minimums)

	Primer/Intermediate	Top Coat	
		Ureth	Acryl/EpAcryl
% Total Solids by Weight	85	69	50
% Total Solids by Volume	90	54	40
% Pigment by Weight	----	28	20 - 24
Weight per Gallon, lbs	10.5	9.5	10
Viscosity(Stormer @ 77 deg.F) KU	----	75 - 110	80 - 130
Pot Life @ 75 deg F Hr.	2	3	8
Sag Resistance (Lenata)	----	12 - 18	8 - 12
Recommended Mils DFT	5-8	4-6	2-5
Storage Life, mos.	24	12	12

3. Submissions and Approvals. For NEPCOAT approved systems, the Contractor shall notify the Department's Research and Technology Section, through the Resident Engineer, of his choice of system sufficiently in advance of his scheduled start of painting work to allow time for the Department to verify the presence of the chosen system on the approved list.

Submissions for approval of systems NOT on the NEPCOAT approved list shall be submitted to the Department at least two (2) weeks in advance of the work in order to allow the Department sufficient time to perform any examination or testing it deems necessary. No painting work will be allowed until all proposed systems have received final approval.

4. Method of Measurement. Not applicable.

5. Basis of Payment. Paint Systems for Structural Steel will not be paid for separately, but shall be included in the contract unit price(s) per square foot for "Painting Structural Steel" and/or "Painting Existing Structural Steel."

929.0300

CHAMP MANAGEMENT SYSTEM

DESCRIPTION. The Rhode Island Department of Transportation has engaged a computerized contract compliance management system specifically designed to monitor conformity with Rhode Island and Federal affirmative action and Disadvantaged Business Enterprise (DBE) laws and regulations. Champ-CM (Contractor's Module) and Champ-SM (Sub-Contractor's Module) monitor DBE participation, On-The-Job Training (OJT) and employment utilization more accurately and in less time than other manual methods. This program is in support of Executive Order 11246, Training Special Provision, and Special Provisions - Disadvantage Business Enterprise contained within this contract.

This program will be obtained by the contractor and all approved sub-contractors from Washington & Rice, LLC, Chagrin Center Suite 201, 27629 Chagrin Blvd., Woodmere, Ohio 44122. The telephone number is 1-216-591-9130. The Department will require the input of data from payroll files for both the prime contractor and **ALL** approved sub-contractors with contracts in excess of $10,000. The RIDOT Champ Coordinator will provide the contractor/sub-contractor with assistance as needed during the term of this contract (**For more information, contact the RIDOT Champ Coordinator at 401-222-3260 ext. 4190**).

EQUIPMENT. Minimum system requirements for Champ-CM Standalone Edition are as follows:

A Pentium or Higher Processor or higher (Pentium II recommended)
Microsoft Windows 98 Second Edition or greater (Windows 2000 recommended)
A minimum of 16MB of RAM (64MB recommended; 128 MB of RAM for Windows 2000 XP)
CD-ROM Drive for installation
High resolution 17" color monitor (recommended)
A minimum of 60MB hard disk space (100 MB hard disk space recommended)

For more information and the system requirements for the Champ-CM Network Edition, contact the RIDOT Champ Coordinator.

METHODS. After award of contract and prior to notice to proceed, the contractor will contact Washington & Rice, LLC to purchase the Champ-CM program. For the duration of the contract, the contractor will be required to keep the database updated and to provide on a monthly basis it's Champ information, including it's Sub-Contractor activity, to the Department via floppy disk, CD-ROM or e-mail. The Champ information shall be submitted to the Rhode Island Department of Transportation's Champ Coordinator, Two Capitol Hill Room 105, Providence, RI 02903, by the tenth of the month and shall include all the previous month's activity. This requirement does not preclude the contractor from the obligation to maintain records as a backup to this program. The contractor will be subject to a review of back-up records by the Business and Community Resources Unit, DBE Program, as deemed necessary by that office. The contractor will be required to notify the RIDOT Champ Coordinator of any errors or "bugs" which are discovered in the use of the Champ program.

NON-COMPLIANCE. Failure to comply with the above will result in delay of progress payments and continued violations will lead to a notice of non-compliance. If a notice on non-compliance is issued, the Engineer may suspend all payments and/or initiate other sanctions against the contractor.

METHOD OF MEASUREMENT. The Champ Management System will be measured by the actual cost, verified by the paid invoice indicating the RIDOT contract number, from Washington & Rice, LLC. The Prime Contractor shall purchase, once only, one copy of Champ-CM for itself and may purchase, on an as-needed basis, Champ-CM or Champ-SM for the sub-contractors on the project.

BASIS OF PAYMENT. The contractor/subcontractor will be reimbursed the purchase price of the Champ software one time only. There will be **NO** additional compensation for computer equipment, training, Maintenance Fees, updating the database, submitting the appropriate reports to the Department and maintaining records as a backup. The estimated dollar amount for this item of work, as extended in the proposal, is established by the Department and represents an authorized lump-sum amount from which payments for the purchase of the Champ software will be drawn.

929.1000

FIELD OFFICES AND MATERIALS LABORATORY

DESCRIPTION. The items of computer equipment and software to be provided for this Contract in accordance with **Para. c. of Subsection 929.03.5; Special Requirements for Field Office,** of the Standard Specifications, consist of the following:

One (1) wide carriage – 24 pin printer (NEC Pinwriter P6300, Okidata Microline, or Panasonic) or approved compatible equal.

One (1) Laser Printer capable of printing standard and custom paper sizes from 3 by 5 inches to 11 by 17 inches. Print quality shall be 1200 by 1200 dpi minimum resolution and have a minimum of 64 MB RAM . Printer must be setup and shared by both computers.

Two (2) IBM PC compatible computers with a Pentium 4 Processor at 2.4 GHz 256k cache (minimum); 533 MHz system bus/ 512 L2 Cache; 256 MB 266 MHz RAM (minimum); 20 GB hard drive (minimum); 64 MB Graphics card DRAM or VRAM (minimum); 10/100 Network Interface Card: 1.44 MB 3.5" floppy disk drive; 48X CD ROM with controller, 101 key enhanced keyboard; mouse, 56k bps modem; PCI HDD/FDD controller; 2 serial & 1 parallel port; and 2 USB ports. Installed software shall include: Microsoft Windows 2000 with the latest service packs or better, Microsoft Office Professional (2000 version or better) with latest service packs, Word Perfect for Windows, Norton Anti Virus with subscription support for the life of the project.

Two 17" (16" viewable minimum) SVGA low radiation VESA compliant monitors with 0.27 MM (maximum) dot pitch.

A 450 VA backup power supply.

Dust shields and a security cabinet capable of physically containing all hardware, software, and accessories.

The contractor shall provide maintenance and supplies for the life of the project. Supplies shall include regular one (1) part form-feed paper 9.5" x 11", NCR type four (4) part form feed carbonless – black print perforated paper 9.5" x 11" with the first page – white , second page – canary, third page – pink, and the fourth page – gold, 3.5" DSHD floppy disks, an extra printer ribbon, toner, inks, all paper, etc., with the original installation and as required, as soon as possible after notification by the Resident Engineer.

One (1) approved desktop copying machine with automatic document feeder or approved compatible equal by Resident Engineer.

One (1) approved facsimile machine by Resident Engineer, meeting the following standards at a minimum: desktop transceiver; automatic fax/tel switch, with only one phone line needed; 10 page document feeder; 9600 bps modem speed with automatic fallback; answering machine interface; 20 location capacity; one-touch dial 16 locations; PSTN line connection; monitor speaker; 16 character LCD size; local copy function; status/error indicators; transmit and receive confirmation reports; no more than 15 pounds in weight; 120V-60 HZ power requirement; built-in handset; image control resolution at standard 200 x 100 ipi, at fine 200 x 200 ipi, and at super-fine 200 x 400 ipi; 16 level grey scale; automatic redial 2 times at 3 minute intervals; 128 kb memory capacity.

The contractor shall provide a separate phone line for the computers and the facsimile machine.

930.1000

PLANT FIELD LABORATORY

DESCRIPTION. The items of computer equipment and software to be provided for this Contract in accordance with **Subsection 930.03.3; Computer Equipment**, of the Standard Specifications, consist of the following:

One IBM PC Compatible computer with 750 Mhz or superior processor; 256K cache (minimum); CPU cooling fan; PCI Local Bus; 128MB RAM (minimum); 20 Gb IDE hard drive (minimum); 8MB (minimum) AGP Video Card; 1.44MB 3.5" floppy disk drive 40x (minimum) CD ROM with controller; PCI HDD/FDD controller; 2 serial, 1 parallel port; 17" (minimum) SVGA NI low radiation VESA compliant monitor with 0.28mm (maximum) dot pitch; 101 key enhanced keyboard; trackball; DSL modem with DSL line (640kb downstream & 90Kb upstream) and Internet service provider; 450VA backup power supply; 9 ppm (minimum) color inkjet printer; surge protector; all cables and cartridges for printer; paper; permanent keyboard dust shield; 3.5" high density diskettes; permanent computer dust shield; Microsoft Windows and Microsoft Access Database for Windows (most recent versions).

943.0100

TRAINING PROVISIONS

The purpose of this specification is to require the establishment of a contractor-based program to provide on-the-job training for the purpose of developing full journey-workers through apprenticeship programs in accordance with the Rhode Island Department of Transportation's Training Provisions. The program overview is available at the Rhode Island Department of Transportation, Office of Business and Community Resources (OBCR). This training is to be provided as part of the Contractor's equal employment opportunity affirmative action program and selections to this program should be based on the Contractor's needs relative to achieving compliance. Therefore, until such time as the Contractor can show full utilization of minorities and women with respect to its affirmative action goals, this program shall, for the most part, be limited to minorities and/or women. The Department maintains the right to reject any applicant whom it feels is not appropriate given all the pertinent factors and information available at the time of appointment. As such, the Contractor shall supply to the Department's Office of Business and Community Resources (OBCR) any information utilized in the consideration of the appointments. The Department will then notify the Contractor in writing, with proper explanation as necessary, as to the acceptability of an applicant. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not. Furthermore, no employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey-worker status or in which they have been employed as a journey-worker.

The Contractor shall submit to the Department's Office of Business and Community Resources, for written approval, prior to the start of the normal construction season and not later than April 1st of that year, a training plan outlining and detailing the proposed number of trainees, projected hours to be worked and the type of training to be provided. The number of trainees maintained within the training program annually will be based on the Contractor's projected gross Rhode Island work for that particular year. The Contractor will provide training for one individual for up to every five million dollars ($5,000,000.00) of the Contractor's anticipated gross Rhode Island work less subcontracting expenses. Due to the fact that the original yearly staffing for this program will be based on projection, adjustments to the program will be allowed upon written approval of the Department.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Department. The Department shall approve the program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journey-worker status in the classification concerned. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training or with a state apprenticeship agency recognized by the Bureau of Apprenticeship and Training, and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Bureau of Apprenticeship and Training will also be considered acceptable provided they are being administered in a manner consistent with the equal employment obligations of the Contractor. The intent of this provision is to provide training in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, schedulers, estimators, timekeepers and so on where the training is oriented towards construction applications. The Department reserves the right to accept or reject any training classifications submitted by a contractor, and initiate a new programs under the volition of the Department.

Although the intent of this requirement of this requirement is to utilize trainees on RIDOT projects, the program is not limited solely to this venue. The Contractor may utilize trainees on private contracts as well. The intent of this allowance is for the purpose of maintaining, to the extent possible, continuous training for the trainee and his or her ultimate achievement of journey-worker status. Therefore, the Contractor shall make every effort to reinstate those persons laid-off who were entered in its training program prior to any new recruitment in said program. Furthermore, those trainees satisfactorily completing a construction season and still classified as a trainee shall be automatically enlisted in the Contractor's next training program when work projections allow, unless the trainee is unavailable or not returned for reasons mutually agreed upon by the Department and the Contractor.

The Contractor shall submit to the Department's Office of Business and Community Resources monthly reports on all personnel incorporation all achievements associated with the training program for that particular period. The report shall list all trainees and their employment status categorizing all hours for each trainee by contract, and further divided by FAP and Non-FAP projects. The report shall also be accompanied by a narrative on each trainee outlining any substantive achievements or problems encountered during the reporting period. Discussion should also be included as to the ability, attitude, attendance and potential of the individual trainees, and any recommendations the Contractor may have relative to trainees and/or the trainee program. These reports are subject to verification by RIDOT's Office of Business and Community Resources and must be supported by certified payrolls. Any attempt on the contractor's part to simply submit a formatted report without an original personal discussion on each trainee taking part in the program will be deemed unacceptable. Monthly reports shall be submitted on standardized forms incorporated into the Department's CHAMP program.

Based on submitted proper documentation for payment, the Contractor will receive reimbursement at the bid price rate for each trainee-hour worked by an approved trainee within the training program on RIDOT federally funded projects. Payments will be processed against those projects in which training occurred, subject to verification by the Department. Reimbursement requests shall be submitted by the Contractor monthly, where applicable. The Contractor will not receive any financial reimbursement for hours worked on non-RIDOT or non-federally funded RIDOT activities; however, the hours worked which are not financially reimbursable will still be attributed to and count as credit towards the contractor's approved training program.

Compliance determinations with respect to the Contractor's efforts to achieve those goals established for a training season as outlined in the contractor's approved training program will be conducted and completed bi-annually within a particular season during the summer and winter months. The summer review will allow for adjustment in staffing based on more definitive contract work information. However, should the Department determine through the year-end review that the Contractor has failed to comply with the goals outlined and included in the Contractor's training program, then the number of remaining hours not met for the compliance period (April-December) on FAP projects will be multiplied by the prevailing wage rate for those trainee classifications deficient, with the resulting costs being reimbursed to the Department by the Contractor prior to the beginning of the next training period. Should the Contractor fail, and without just cause, to comply with this reimbursement requirement, then it will be precluded from bidding on all RIDOT projects until such time as this financial obligation to the Department has been met and a new and approved training program is established and initiated with the Department.

Basis of Payment: The Contractor will be paid for trainee work-hours at the contract unit price per Man-Hour (MNHR), as listed in the Proposal. The unit bid price per work hour as paid to the Contractor shall constitute full compensation for the trainee services, including all fringe benefits. Reimbursement will be made only in accordance with the requirements of this specification and only for work performed on federally funded RIDOT projects.

Special Notes:

If a "Trainee" pay item is not carried in the proposal pages, then this provision is not applicable.

Minimum bid for this item is $6.00/hour.

The reference to "Contractor" includes both prime contractors and subcontractors with RIDOT approved training programs.

If a subcontractor of the Contractor has a training program approved by RIDOT the same "Basis of Payment" is applicable.